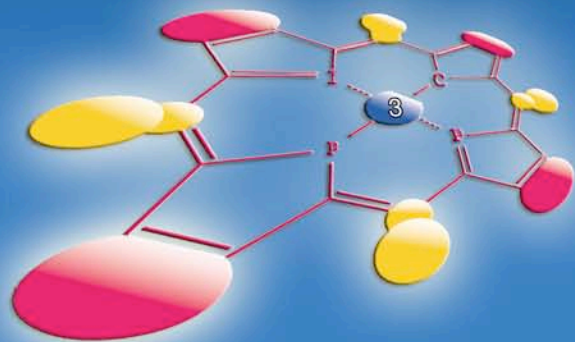




**NEW ORLEANS**

July 11-16, 2004

# ICPP-3

## Program Book



Third International Conference on Porphyrins and Phthalocyanines

Co-Chairmen:

Karl M. Kadish (Houston, TX, USA);  
Kevin M. Smith (Baton Rouge, LA, USA);  
Jonathan Sessler (Austin, TX, USA)

# Downtown New Orleans



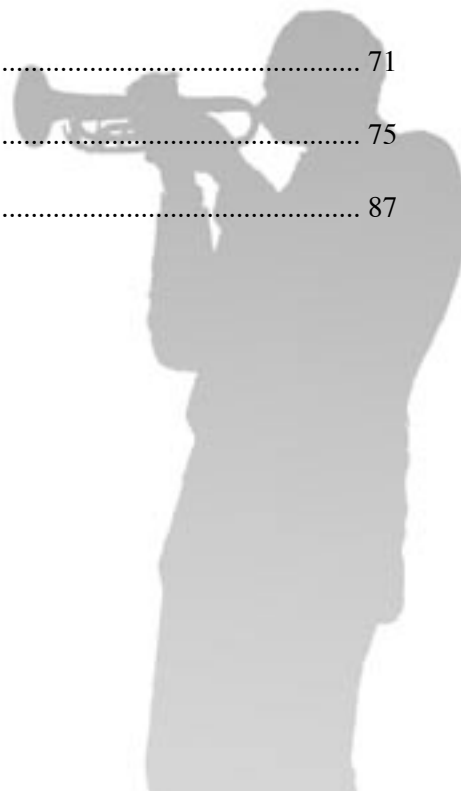




# ICPP-3 Program Book

## CONTENTS

|                                       |    |
|---------------------------------------|----|
| Sheraton Hotel Floor Plan.....        | 1  |
| Schedule at a Glance.....             | 7  |
| Schedule Arranged by Day .....        | 15 |
| <i>Sunday, July 11</i> .....          | 17 |
| <i>Monday, July 12</i> .....          | 18 |
| <i>Tuesday, July 13</i> .....         | 25 |
| <i>Wednesday, July 14</i> .....       | 43 |
| <i>Thursday, July 15</i> .....        | 44 |
| <i>Friday, July 16</i> .....          | 63 |
| Speaker List .....                    | 71 |
| Author List.....                      | 75 |
| Participants Arranged by Country..... | 87 |



# **Sponsors of Lifetime Achievement Awards in Porphyrins & Phthalocyanines**

QLT, Inc

Hans-Fischer Gesellschaft

Friends of the Phthalocyanine Community

## **Sponsor of SPP-JPP Young Investigator Awards**

Society of Porphyrins and Phthalocyanines (SPP)

Journal of Porphyrins and Phthalocyanines (JPP)

## **Other Sponsors**

Anonymous

Axcan Pharma Inc.

BEL Japan, Inc.

Elsevier Science B.V.

Exciton, Inc.

Friends of Phthalocyanine Community

Frontier Scientific, Inc.

ICPP-2 Local Organizing Committee

Light Sciences Corporation

Meihosha Company

Oncologic Foundation of Buffalo

QLT Inc.

Schering AG

State Research Center of Russia «*Organic  
Intermediates and Dyes Institute*»

Strem Chemicals, Inc.

Technobiochip s.c.a r.l.

Ultrafast Systems LLC

## **Exhibitors**

Brinkmann Instruments. Inc.

Elsevier Science B.V.

Technobiochip s.c.a.r.l.



# ICPP-3 Program Book



## **Sheraton Hotel Floor Plan**

Fourth Floor – Hospitality Suite

Fifth Floor – Meeting Area

Eighth Floor – Poster and Meal Functions





# Sheraton Hotel Floor Plan

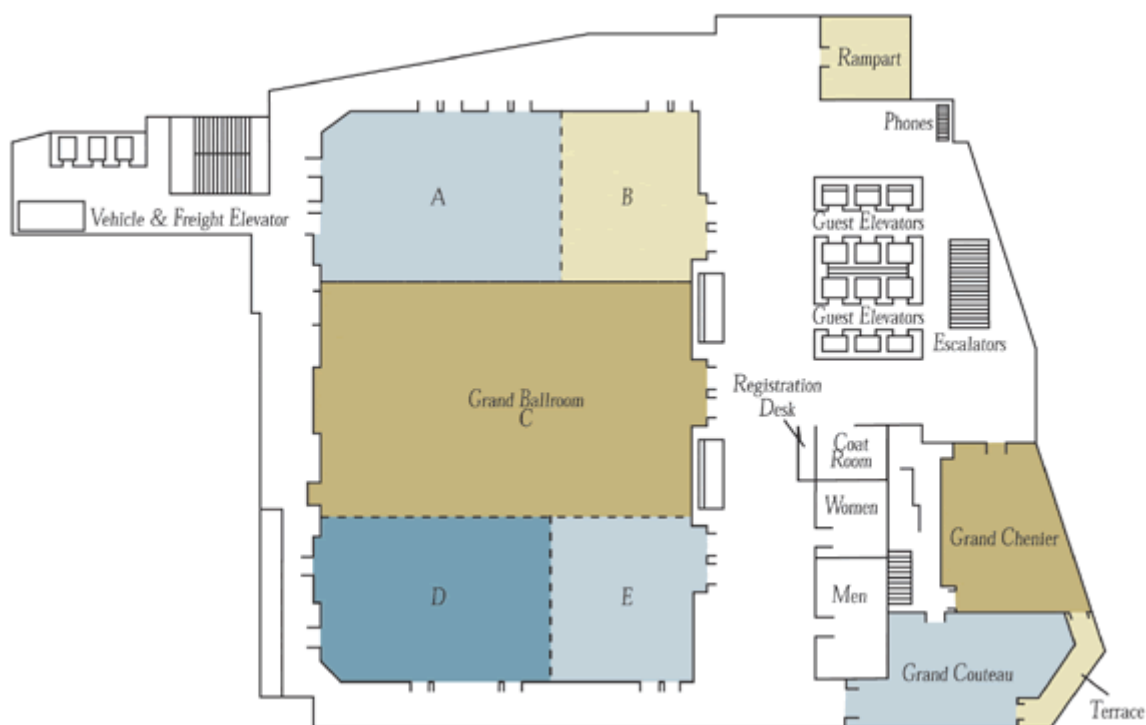
## Fourth Floor



| Meeting Room | Function                            |
|--------------|-------------------------------------|
| Nottaway     | ICPP-3 Conference Hospitality Suite |
| Oak Alley    | Private Conference Room             |

# Sheraton Hotel Floor Plan

## Fifth Floor

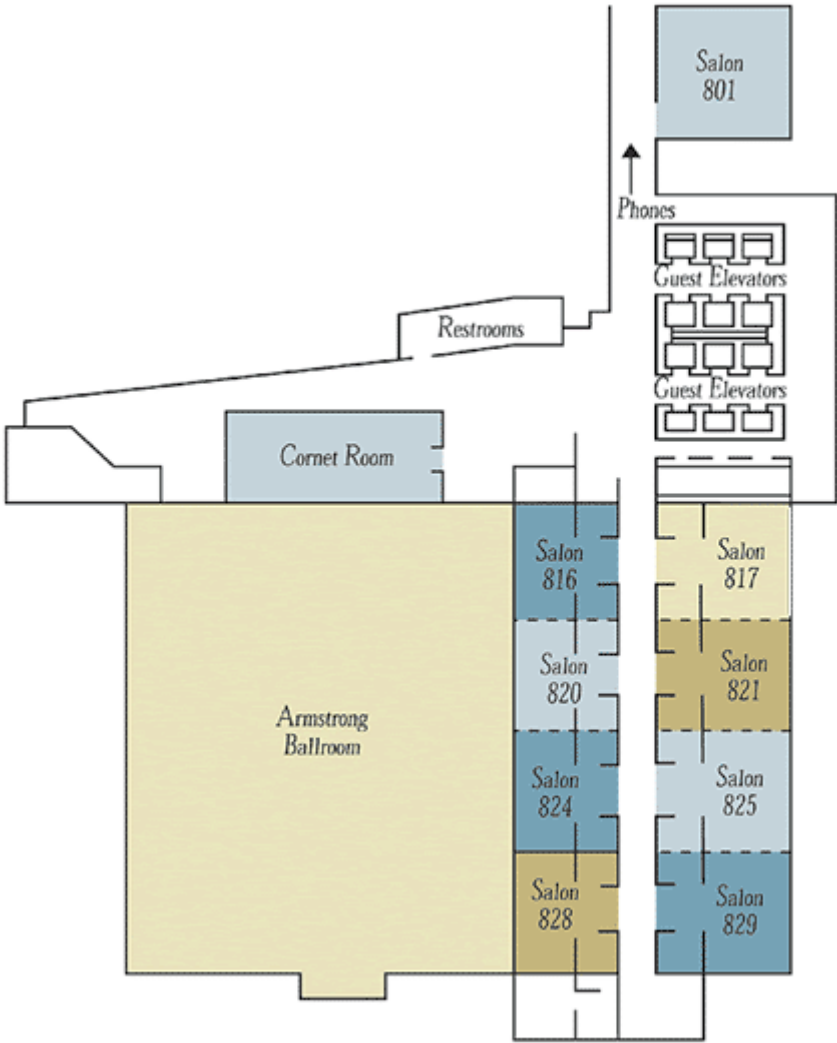


| Meeting Room     | Function                            |
|------------------|-------------------------------------|
| Grand Ballroom A | Symposia                            |
| Grand Ballroom B | Symposia                            |
| Grand Ballroom C | Plenary Lectures and Award Lectures |
| Grand Ballroom D | Symposia                            |
| Grand Ballroom E | Symposia                            |
| Grand Chenier    | Symposia                            |
| Grand Couteau    | ICPP-3 and SPP Offices              |
| Rampart Room     | Speaker Ready Room                  |



# Sheraton Hotel Floor Plan

## Eighth Floor



| Meeting Room       | Function                                                     |
|--------------------|--------------------------------------------------------------|
| Armstrong Ballroom | SPP Breakfasts<br>SPP Business Lunch<br>Poster Presentations |





# ICPP-3 Program Book



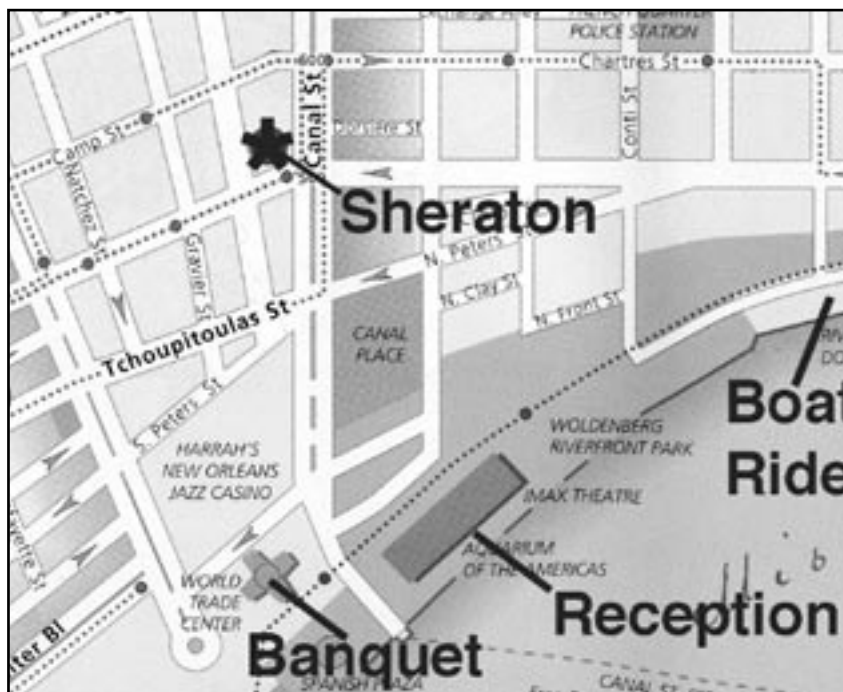
## Schedule at a Glance





# Sunday, July 11

|             | Time       | Sunday 7/11                                                | Room                                          |
|-------------|------------|------------------------------------------------------------|-----------------------------------------------|
| <b>A.M.</b> | 8:30-12:00 | <b>Conference Registration<br/>and<br/>Portrait Photos</b> | Sheraton Hotel<br><i>5<sup>th</sup> Floor</i> |
| <b>P.M.</b> | 12:00-6:00 |                                                            |                                               |
|             | 6:30-9:30  | <b>Welcome Reception</b><br>(Aquarium of the Americas)     | See map                                       |



## Monday, July 12

|      | Time        | Monday 7/12                                                                                                                      | Room       |
|------|-------------|----------------------------------------------------------------------------------------------------------------------------------|------------|
| A.M. | 7:00-8:00   | <i>Continental Breakfast (SPP members only)</i>                                                                                  | Armstrong  |
|      | 8:15-8:30   | Opening Ceremonies                                                                                                               | Ballroom C |
|      | 8:30-9:30   | PLENARY LECTURE - <b>Michael J. Cook</b>                                                                                         | Ballroom C |
|      | 9:30-10:00  | <i>Coffee Break</i>                                                                                                              | Ballroom C |
|      |             | <b>Synthesis, Structure and Properties of Porphyrin Analogs</b><br>(organized by Hiroyuki Furuta and Lechoslaw Latos-Grazynski)  | Ballroom A |
|      |             | <b>Structural Chemistry of Porphyrins and Phthalocyanine</b><br>(organized by W. Robert Scheidt and Michael Klaus Engel)         | Ballroom B |
|      |             | <b>Covalently Linked Porphyrin Based Light-Harvesting Systems</b><br>(organized by Jonathan S. Lindsey)                          | Ballroom C |
|      | 10:00-12:30 | <b>Oxygen and Peroxide Activation by Heme Proteins</b><br>(organized by John Dawson and Yoshi Watanabe)                          | Ballroom D |
|      |             | <b>Phthalocyanine Thin Films, Junctions and Devices</b><br>(organized by Marcel Bouvet and Derck Schlettwein)                    | Ballroom E |
|      |             | <b>Metalloporphyrin Catalysts for Organic Synthesis</b><br>(organized by Chi-Ming Che, Gérard Simonneaux and Pietro Tagliatesta) | Chenier    |
| P.M. | 12:30-2:00  | <i>SPP Business Lunch</i>                                                                                                        | Armstrong  |
|      |             | <b>Porphyrin Chemistry and Functionalization</b><br>(organized by Mathias O. Senge and Dennis P. Arnold)                         | Ballroom A |
|      |             | <b>The Role of Metal Ions in Phthalocyanines and Related Species</b><br>(organized by Claudio Ercolani and A.Barry P. Lever)     | Ballroom B |
|      |             | <b>Porphyrin-Based Molecular Assemblies and Networks</b><br>(organized by Mir Wais Hosseini and Véronique Bulach)                | Ballroom C |
|      | 2:00-4:30   | <b>Heme Protein Folding and Function</b><br>(organized by Paola Turano and Stuart J. Ferguson)                                   | Ballroom D |
|      |             | <b>Industrial Applications of Phthalocyanines and Porphyrins</b><br>(organized by Dieter Wöhrle and Roman S. Czernuszczwicz)     | Ballroom E |
|      |             | <b>Advances in Electrochemistry of Porphyrins and Phthalocyanines</b><br>(organized by Francis D'Souza and Maurice L'Her)        | Chenier    |
|      | 4:30-5:00   | <i>Group Photo</i>                                                                                                               | Ballroom C |
|      | 5:00-6:00   | PLENARY LECTURE - <b>Bernhard Kräutler</b>                                                                                       | Ballroom C |



# Tuesday, July 13

|      | Time              | Tuesday 7/13                                                                                                                         | Room       |
|------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------|
| A.M. | 7:00-8:00         | <i>Continental Breakfast (SPP members only)</i>                                                                                      | Armstrong  |
|      | 8:00-8:30         |                                                                                                                                      |            |
|      | 8:30-9:30         | <b>PLENARY LECTURE - Shunichi Fukuzumi</b>                                                                                           | Ballroom C |
|      | 9:30-10:00        | <i>Coffee Break</i>                                                                                                                  |            |
|      |                   | <b>Expanded Porphyrins and Core Modified Porphyrins</b><br>(organized by Jun-ichiro Setsune and T.K. Chandrashekar)                  | Ballroom A |
|      |                   | <b>Non-Planar Porphyrins and Phthalocyanines</b><br>(organized by John Shelnutt and Ru-Jen Cheng)                                    | Ballroom B |
|      | 10:00-12:30       | <b>New Porphyrin Architectures and Host-Guest Chemistry</b><br>(organized by Bhaskar Maiya and Koji Kano)                            | Ballroom C |
|      | Symposia Lectures | <b>Modification of Hemoproteins</b><br>(organized by Takashi Hayashi and Yi Lu)                                                      | Ballroom D |
|      |                   | <b>Synthesis and Properties of Porphyrazines and their Analogues</b><br>(organized by Pavel Stuzhin and M. Salomé Rodríguez-Morgade) | Ballroom E |
|      |                   | <b>Vitamin B<sub>12</sub> Chemistry and Biology</b><br>(organized by Yoshio Hisaeda and Wilfred van der Donk)                        | Chenier    |
| P.M. | 12:30-2:00        | <i>Lunch Meeting of JPP Board &amp; SPP National Representatives</i>                                                                 | Oak Alley  |
|      |                   | <b>Porphyrin Synthesis</b>                                                                                                           | Ballroom A |
|      |                   | <b>Expanded Porphyrins and Core Modified Porphyrins</b>                                                                              | Ballroom B |
|      | 2:00-4:00         | <b>Dyads, Arrays and Supramolecular Porphyrins</b>                                                                                   | Ballroom C |
|      |                   | <b>Physical Properties and Characterization</b>                                                                                      | Ballroom D |
|      |                   | <b>Porphyrin Properties and Applications</b>                                                                                         | Ballroom E |
|      |                   | <b>Theory, Macrocycle Planarity, Ruffling, Spectroscopy</b>                                                                          | Chenier    |
|      | 4:00-4:30         | <i>Coffee Break</i>                                                                                                                  |            |
|      | 4:30-6:30         | <b>SPP/JPP AWARD LECTURES</b>                                                                                                        | Ballroom C |
|      | 6:30-8:30         | Poster Presentations                                                                                                                 | Armstrong  |

# Wednesday, July 14

|      | Time        | Wednesday 7/14                                                            | Room       |
|------|-------------|---------------------------------------------------------------------------|------------|
| A.M. | 7:00-8:00   | <i>Continental Breakfast (SPP members only)</i>                           | Armstrong  |
|      | 8:00-8:30   |                                                                           |            |
|      | 8:30-10:00  | <b>Lifetime Achievement Award Lectures</b>                                | Ballroom C |
|      | 10:00-10:30 | <i>Coffee Break</i>                                                       |            |
|      | 10:30-12:00 | <b>Lifetime Achievement Award Lectures</b>                                | Ballroom C |
| P.M. | 12:00-2:00  | <i>Lunch Time</i>                                                         |            |
|      | 2:00-4:30   | <b>Natchez Boat Trip</b><br><i>(Mississippi River Cruise)</i>             | See map    |
|      | 7:30-10:30  | <i>Conference Banquet</i><br><i>(Plimsohl Club at World Trade Center)</i> | See map    |



# Thursday, July 15

|      | Time              | Thursday 7/15                                                                                                                                        | Room       |
|------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| A.M. | 7:00-8:00         | <i>Continental Breakfast (SPP members only)</i>                                                                                                      | Armstrong  |
|      | 8:00-8:30         |                                                                                                                                                      |            |
|      | 8:30-9:30         | <b>PLENARY LECTURE - F. Ann Walker</b>                                                                                                               | Ballroom C |
|      | 9:30-10:00        | <i>Coffee Break</i>                                                                                                                                  |            |
|      |                   | <b>Medical Applications of Photodynamic Therapy</b><br>(organized by Johan van Lier and David Dolphin)                                               | Ballroom A |
|      |                   | <b>Synthesis, Structure and Properties of New Phthalocyanines</b><br>(organized by Nagao Kobayashi and Clifford Leznoff)                             | Ballroom B |
|      |                   | <b>Supramolecular Assemblies for Electron Transfer</b><br>(organized by Hiroshi Imahori and Dirk Guldi)                                              | Ballroom C |
|      | 10:00-12:30       |                                                                                                                                                      |            |
|      | Symposia Lectures | <b>Porphyrinic Pigment Membrane Interactions</b><br>(organized by Uschi Simonis and Benny Ehrenberg)                                                 | Ballroom D |
|      |                   | <b>Theoretical Aspects of the Electronic Structures of Phthalocyanines, Porphyrins and Analogs</b><br>(organized by Martin Stillman and Abhik Ghosh) | Ballroom E |
| P.M. |                   | <b>Synthesis and Properties of Corroles and other Ring-Contracted Systems</b><br>(organized by Daniel Gryko and David Goldberg)                      | Chenier    |
|      | 12:30-2:00        | <i>Lunch Time</i>                                                                                                                                    |            |
|      |                   | <b>Medical and PDT</b>                                                                                                                               | Ballroom A |
|      |                   | <b>Phthalocyanines</b>                                                                                                                               | Ballroom B |
|      |                   | <b>Dyads, Arrays and Supramolecular Porphyrins</b>                                                                                                   | Ballroom C |
|      | 2:00-4:20         | <b>Heme Proteins, Cytochromes and Biological Materials</b>                                                                                           | Ballroom D |
|      |                   | <b>Synthesis, Structure and Reactivity</b>                                                                                                           | Ballroom E |
|      |                   | <b>Corroles and Corrins</b>                                                                                                                          | Chenier    |
|      | 4:20-4:50         | <i>Coffee Break</i>                                                                                                                                  |            |
|      | 4:50-5:00         | ICPP-4 and other Announcements                                                                                                                       | Ballroom C |
|      | 5:00-6:00         | <b>PLENARY LECTURE - Ivano Bertini</b>                                                                                                               | Ballroom C |
|      | 6:00-8:00         | Poster Presentations                                                                                                                                 | Armstrong  |

## Friday, July 16

|      | Time        | Friday 7/16                                                                                                                                        | Room       |
|------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| A.M. | 7:00-8:00   | <i>Continental Breakfast (SPP members only)</i>                                                                                                    | Armstrong  |
|      | 8:00-8:30   |                                                                                                                                                    |            |
|      | 8:30-9:30   | <b>PLENARY LECTURE - Tomás Torres</b>                                                                                                              | Ballroom C |
|      | 9:30-10:00  | <i>Coffee Break</i>                                                                                                                                |            |
|      |             | <b>Porphyrin-Based Compounds as Tumor Diagnostic and Therapeutic Agents</b><br>(organized by Ravindra K. Pandey and Eva M. Sevick-Muraca)          | Ballroom A |
|      |             | <b>Synthesis of Oligomeric and Polymeric Phthalocyanines and Phthalocyanine Analogs</b><br>(organized by Neil B. McKeown and William S. Durfee)    | Ballroom B |
|      |             | <b>Porphyrin and Porphyrin-Analogue Based Sensors and Sensor Arrays</b><br>(organized by Roberto Paolesse and Vladimir Kral)                       | Ballroom C |
|      | 10:00-12:30 | <b>Spectroscopic Studies of Heme Enzymes</b><br>(organized by Brian M. Hoffman and Giulietta Smulevich)                                            | Ballroom D |
|      |             | <b>The Renaissance in Optical Spectroscopy of Phthalocyanines and other Tetraazaporphyrins</b><br>(organized by Tebello Nyokong and Hiroaki Isago) | Ballroom E |
|      |             | <b>Main Group Metalloporphyrins</b><br>(organized by Penny J. Brothers)                                                                            | Chenier    |
| P.M. | 12:30-2:00  | <i>Lunch Time</i>                                                                                                                                  |            |
|      |             | <b>Porphyrin Synthesis</b><br>(organized by M. Graça Vicente and Maxwell J. Crossley)                                                              | Ballroom A |
|      |             | <b>Phthalocyanine-Based Materials</b><br>(organized by Michael Hanack and Danilo Dini)                                                             | Ballroom B |
|      |             | <b>Supramolecular Chemistry and Nanosciences of Porphyrins</b><br>(organized by Takuzo Aida and Roeland Nolte)                                     | Ballroom C |
|      | 2:00-4:30   | <b>Chemical Modelling of Heme Enzymes and Related Systems</b><br>(organized by Yoshinori Naruta and Jean-Claude Marchon)                           | Ballroom D |
|      |             | <b>Interactions of Bio-Molecules with Porphyrins</b><br>(organized by Masaaki Tabata and Luigi Marzilli)                                           | Ballroom E |
|      |             | <b>Chemistry and Photofunction of (Bacterio)chlorophylls</b><br>(organized by Hitoshi Tamiaki and Ravindra Pandey)                                 | Chenier    |
|      | 4:30-5:00   | <i>Coffee Break</i>                                                                                                                                |            |
|      | 5:00-6:00   | <b>PLENARY LECTURE - Atsuhiko Osuka</b>                                                                                                            | Ballroom C |
|      | 6:00        | Closing Ceremonies                                                                                                                                 | Ballroom C |



# ICPP-3 Program Book



## Schedule Arranged by Day





# Sunday, July 11

|                |                         |                                       |
|----------------|-------------------------|---------------------------------------|
| 8:30 - 6:00    | Conference Registration | Sheraton<br>Hotel<br><i>5th Floor</i> |
| 6:30 - 9:30 pm | Welcome Reception       | Aquarium of<br>the Americas           |

# Monday, July 12

## Plenary Lectures

### Grand Ballroom C

|                |                                                                                                   |                 |
|----------------|---------------------------------------------------------------------------------------------------|-----------------|
| 8:30 – 9:30 am | Merits of substituting phthalocyanines at non-peripheral ring positions<br><b>Michael J. Cook</b> | Abstract<br>318 |
|                | Chaired by A. Barry P. Lever                                                                      |                 |
| 5:00 – 6:00 pm | Taming the tiger – A tale of the pigments of life<br><b>Bernhard Kräutler</b>                     | Abstract<br>320 |
|                | Chaired by Alan R. Battersby                                                                      |                 |



# Monday, July 12/AM

## Symposium Lectures

### Synthesis, structure and properties of porphrin analogs

Chaired by Hiroyuki Furuta and Lechoslaw Latos-Grazynski

Grand Ballroom A

|          |                                                                                                                                                                      |                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Unusual chemical properties of 21-telluraporphyrins<br><b>Michael R. Detty</b> , Masako Abe and Youngjae You                                                         | Abstract<br>365 |
| 10:30 am | Toward the usage of iron N-confused porphyrin as models for heme proteins<br><b>Chen-Hsiung Hung</b>                                                                 | Abstract<br>402 |
| 11:00 am | Metal arene binding modes in metallocarbaporphyrinoids<br><b>Lechoslaw Latos-Grazynski</b>                                                                           | Abstract<br>428 |
| 11:30 am | Coordination chemistry of multiply N-confused porphyrinoids<br><b>Hiroyuki Furuta</b> , Alagar Srinivasan, Hiromitsu Maeda, Tomoya Ishizuka and Tatsuki Morimoto     | Abstract<br>378 |
| 12:00 pm | Core modified expanded porphyrins: syntheses, structure and nonlinear optical properties<br><b>Tavarekere K. Chandrashekar</b> , Harapriya Rath and Jeyaraman Sankar | Abstract<br>358 |

### Structural chemistry of porphyrins and phthalocyanines

Chaired by W. Robert Scheidt and Michael Klaus Engel

Grand Ballroom B

|          |                                                                                                                                                                                                                                                                     |                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | New structural results for several iron porphyrinate classes<br><b>W. Robert Scheidt</b> , Charles E. Schulz, Ilona Turowska-Tyrk, Chuanjiang Hu, Teresa J. Neal, Orde Q. Munro, Judith A. Serth-Guzzo, Arne Roth, Martin K. Safo, Ming Li, and Graeme R. A. Wyllie | Abstract<br>479 |
| 10:30 am | Formation of supramolecular assemblies through porphyrin/fullerene interactions<br><b>Alan L. Balch</b>                                                                                                                                                             | Abstract<br>343 |
| 11:00 am | Molecular tectonics: porphyrin as tecton for the generation of coordination networks<br><b>Mir Wais Hosseini</b>                                                                                                                                                    | Abstract<br>401 |
| 11:30 am | Phthalocyanines: from molecular structures to solid-state arrangements<br><b>Michael Klaus Engel</b>                                                                                                                                                                | Abstract<br>371 |
| 12:00 pm | Factors characterizing the beryllium phthalocyanine and its complexing mode. Comparison to magnesium analog<br><b>Ryszard Kubiak</b>                                                                                                                                | Abstract<br>425 |

Monday, July 12/AM  
**Symposium Lectures**

**Covalently linked porphyrin based light-harvesting systems**

Chaired by Jonathan S. Lindsey and Devens Gust

**Grand Ballroom C**

|          |                                                                                                                                                                                                |                 |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Concatenation of antenna function and photoinduced electron transfer in porphyrin-containing molecular systems<br><i>Devens Gust, Thomas A. Moore and Ana L. Moore</i>                         | Abstract<br>391 |
| 10:30 am | Dynamics of supramolecular multiporphyrin assemblies<br><i>Albert Gossauer</i>                                                                                                                 | Abstract<br>384 |
| 11:00 am | Porphyrin-appended dendrimers: mimics of natural light-harvesting systems<br><i>Maxwell J. Crossley, Joost N. H. Reek, Joseph Sly, Mark A. Absalom, James A. McDonald and Kristin N. Maher</i> | Abstract<br>361 |
| 11:30 am | Controlling the electronic coupling in donor-bridge-acceptor systems<br><i>Bo Albinsson</i>                                                                                                    | Abstract<br>334 |
| 12:00 pm | Ultrafast excitation energy migration processes in various porphyrin arrays<br><i>Dongho Kim</i>                                                                                               | Abstract<br>418 |

**Oxygen and peroxide activation by heme proteins**

Chaired by John H. Dawson and Yoshi Watanabe

**Grand Ballroom D**

|          |                                                                                                                                                                                                               |                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Characterizing the invisible: EPR and ENDOR studies of heme monooxygenase enzymic intermediates<br><i>Brian M. Hoffman</i>                                                                                    | Abstract<br>398 |
| 10:30 am | Reaffirmation of the radical recombination mechanism of cytochrome P450-catalyzed hydroxylations<br><i>Xiang He, Dayi Deng, Max J. Cryle, James J. DeVoss, John T. Groves and Paul R. Ortiz De Montellano</i> | Abstract<br>462 |
| 11:00 am | The role of thiolate ligation in cytochromes P450<br><i>Michael T. Green</i>                                                                                                                                  | Abstract<br>386 |
| 11:30 am | Structure of HmuO, a heme oxygenase from <i>Corynebacterium diphtheriae</i> : implications for heme oxygenase function<br><i>Masaki Unno, Toshitaka Matsui and Masao Ikeda-Saito</i>                          | Abstract<br>405 |
| 12:00 pm | Engineering heme enzymes to bind novel ligands, substrates and molecular wires<br><i>David B. Goodin, Anna-Maria A. Hays, Alycen P. Nigro, Stefan W. Vetter, Alexander R. Dunn and Harry B. Gray</i>          | Abstract<br>382 |

Monday, July 12/AM  
**Symposia Lectures**

**Phthalocyanine thin films, junctions and devices**

Chaired by Marcel Bouvet and Derck Schlettwein

**Grand Ballroom E**

|          |                                                                                                                                                                                                      |                 |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Self-organizing phthalocyanines: toward OFET and OPV devices<br><i>Neal R. Armstrong</i>                                                                                                             | Abstract<br>338 |
| 10:30 am | Molecular field-effect transistors: the key role of phthalocyanines<br><i>Marcel Bouvet</i>                                                                                                          | Abstract<br>350 |
| 11:00 am | Phthalocyanine solar cells, from flat interfaces to bulk heterojunctions<br><i>Dieter Meissner</i>                                                                                                   | Abstract<br>446 |
| 11:30 am | Direct observation of electronic structure of unoccupied states in metal phthalocyanine thin films<br><i>Naoki Sato, Hiroyuki Yoshida and Kiyohiko Tsutsumi</i>                                      | Abstract<br>477 |
| 12:00 pm | Electronic coupling in highly ordered phthalocyanine thin films: influence of chemical substitution and preparation conditions<br><i>C. Mattheus, W. Michaelis, C. Kelting and Derck Schlettwein</i> | Abstract<br>480 |

**Metalloporphyrin catalysts for organic synthesis**

Chaired by Gérard Simonneaux and Pietro Tagliatesta

**Grand Chenier**

|          |                                                                                                                                                                                                                                              |                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Ruthenium porphyrin catalysts for organic synthesis<br><i>Chi-Ming Che</i>                                                                                                                                                                   | Abstract<br>359 |
| 10:30 am | Electropolymerization of metalloporphyrins: new polymers for heterogeneous catalytic reactions<br><i>G rard Simonneaux, Cyril Pori l, Yann Ferrand, Paul le Maux, Christine Paul and Jo lle Rault-Berthelot</i>                              | Abstract<br>491 |
| 11:00 am | Binaphthyl iron-porphyrins: epoxidation of terminal olefins with high turnover numbers and enantiomeric excesses<br><i>Eric Rose, Bruno Andrioletti and Qi-Zhi Ren</i>                                                                       | Abstract<br>475 |
| 11:30 am | Albumin-conjugated corroles: extremely simple, yet very efficient, biomimetic catalysts for asymmetric oxidations<br><i>Zeev Gross, Atif Mahammed, Irena Saltsman, Liliya Simkhovich, Elena Tkachenko, Ruthy Goldberg and Meirav Abdal s</i> | Abstract<br>387 |
| 12:00 pm | The cyclotrimerization of arylethyne catalyzed by metalloporphyrins<br><i>Pietro Tagliatesta</i>                                                                                                                                             | Abstract<br>499 |

# Monday, July 12/PM

## Symposium Lectures

### Porphyrin chemistry and functionalization

Chaired by Mathias Senge and Dennis Arnold

Grand Ballroom A

|         |                                                                                                                                                                                                                                                                                                                            |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | $\pi$ -Expanded porphyrin oligomers aiming at gorgeous nano architectures<br><b>Ken-ichi Sugiura</b> , Aiko Kato, Osamu Yamane, Hitoshi Miyasaka and Masahiro Yamashita                                                                                                                                                    | Abstract<br>496 |
| 2:30 pm | Oxidative rearrangements of porphodimethenes leading to porphyrins with absorptions in the near-IR region<br>Hubert S. Gill, Ivana Bozidarevic, Michael Harmjanz and <b>Michael J. Scott</b>                                                                                                                               | Abstract<br>482 |
| 3:00 pm | Synthesis and physical properties of pyrrole-modified porphyrins, a family of porphyrinoid chromophores with intriguing properties<br><b>Christian Brückner</b> , Jason R. McCarthy, Heather W. Daniell, Katherine K. Lara, Robielyn P. Ilagan, Zeus D. Pendon, Sumi Shima, Lei Ren, Robert R. Birgeand and Harry A. Frank | Abstract<br>355 |
| 3:30 pm | Metals on the edge – Palladium and platinum as porphyrin substituents<br><b>Dennis P. Arnold</b> , Farzad Atefi, Regan D. Hartnell and Margaret J. Hodgson                                                                                                                                                                 | Abstract<br>339 |
| 4:00 pm | Regio- and stereospecific hydroxylation of chlorophyll a derivatives<br><b>Andrey F. Mironov</b>                                                                                                                                                                                                                           | Abstract<br>447 |

### The role of metal ions in phthalocyanines and related species

Chaired by Claudio Ercolani and A. Barry P. Lever

Grand Ballroom B

|         |                                                                                                                                                                                                                                                           |                 |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Further aspects of the solution and surface electrochemistry of metal-lophthalocyanines<br><b>A. Barry P. Lever</b> , J. S. Chen, C. Dharamdat, C. Alexiou, Y. Ma, M. David, Nagao Kobayashi and S. Morin                                                 | Abstract<br>431 |
| 2:30 pm | Role of the metal ion in the absorption and emission properties of porphyrazines and related systems. Insights from DFT/TDDFT theoretical methods<br><b>Angela Rosa</b> , Giampaolo Ricciardi and Evert Jan Baerends                                      | Abstract<br>474 |
| 3:00 pm | Pentavalent iron in coordination chemistry and biology<br><b>Karl Wieghardt</b>                                                                                                                                                                           | Abstract<br>507 |
| 3:30 pm | Crystal growth and magnetic measurements on metallo- and metal-free tetrakis(thiadiazole)porphyrazine<br><b>Kunio Awaga</b> , Masato Fujimori, Yosuke Suzuki and Hirofumi Yoshikawa                                                                       | Abstract<br>340 |
| 4:00 pm | Novel classes of nonaquo- and aquosoluble porphyrazines with externally appended pyridine rings<br>Maria Pia Donzello, C. Bergami, F. Monacelli, P. Galli, Zhongping Ou, Giampaolo Ricciardi, Corrado Rizzoli, <b>Claudio Ercolani</b> and Karl M. Kadish | Abstract<br>372 |

Monday, July 12/PM  
Symposia Lectures

**Porphyrin-based molecular assemblies and networks**

Chaired by Mir Wais Hosseini and Véronique Bulach

Grand Ballroom C

|         |                                                                                                                                                                                                          |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Supramolecular peapods and helix sensors based on bisporphyrins<br><i>Takuzo Aida</i>                                                                                                                    | Abstract<br>333 |
| 2:30 pm | Synthetic porphyrin-, expanded porphyrin-, dipyrin-, and pyrrole-containing motifs for molecular recognition<br><i>Jonathan L. Sessler, Janarthanan Jayawickramarajah, Thomas Köhler and Elisa Tomat</i> | Abstract<br>484 |
| 3:00 pm | Molecular engineering of extended multiporphyrinic architectures<br><i>Nathalie Solladié</i>                                                                                                             | Abstract<br>493 |
| 3:30 pm | Macrocyclic porphyrin rings for light harvesting antenna mimics of photosynthesis<br><i>Yoshiaki Kobuke</i>                                                                                              | Abstract<br>422 |
| 4:00 pm | Tailoring porphyrin framework solids<br><i>Israel Goldberg</i>                                                                                                                                           | Abstract<br>380 |

**Heme protein folding and function**

Chaired by Paola Turano and Stuart J. Ferguson

Grand Ballroom D

|         |                                                                                                                                                                                                                                        |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Modified hemes in <i>c</i> -type and <i>d</i> <sub>1</sub> -type cytochromes; why and how ?<br><i>James W. A. Allen, Oliver Daltrop, Christopher W. Higham, Julie Stevens and Stuart J. Ferguson</i>                                   | Abstract<br>375 |
| 2:30 pm | Nitric oxide and oxygen ligand discrimination in a family of heme sensor proteins<br><i>Michael A. Marletta, Elizabeth M. Boon, David S. Karow, Shirley Huang, Patricia Pellicena, John Kuriyan, Duohai Pan and Richard A. Mathies</i> | Abstract<br>441 |
| 3:00 pm | Protein and ligand induced heme distortion in the nitrophorins<br><i>William R. Montfort, Andrzej Weichsel, Sue A. Roberts, Angela M. Amoia, F. Ann Walker, Ludwik Adamowicz and Stepan Stepanian</i>                                  | Abstract<br>450 |
| 3:30 pm | Mapping heme protein folding energy landscapes<br><i>Ekaterina Pletneva, Jasmin Faraone-Mennella, Judy E. Kim, Jennifer C. Lee, John S. Magyar and Jay R. Winkler</i>                                                                  | Abstract<br>508 |
| 4:00 pm | Protein folding and unfolding and interaction with molecules and ions: the case history of cytochrome c<br><i>Paola Turano</i>                                                                                                         | Abstract<br>502 |

Monday, July 12/PM  
**Symposia Lectures**

**Industrial applications of phthalocyanines and porphyrins**

Chaired by Dieter Wöhrle and Roman S. Czernuszewicz

Grand Ballroom E

|         |                                                                                                                                                                                                                  |                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Application of chlorophyll for photofunctional conversion devices<br><i>Yutaka Amao</i>                                                                                                                          | Abstract<br>336 |
| 2:30 pm | Recent achievements in application of phthalocyanines and their analogues in technics, ecology and medicine<br><i>Oleg L. Kaliya, Sergei G. Kuz'min, Evgeny A. Luk'yanets and Georgy N. Vorozhtsov</i>           | Abstract<br>413 |
| 3:00 pm | Unravelling highly complex tetrapyrrole distributions by LC-MS/MS<br><i>Michael A. Wilson, Angela H. Squier, Ruth L. Airs and Brendan J. Keely</i>                                                               | Abstract<br>416 |
| 3:30 pm | Industrial applications of metallophthalocyanines and their polymers<br><i>Hirofusa Shirai</i>                                                                                                                   | Abstract<br>488 |
| 4:00 pm | Structural fingerprinting of the geological fossils nickel and vanadyl deoxophthalocerythroetioporphyrins using resonance Raman spectroscopy<br><i>Roman S. Czernuszewicz, Ricardo Cantu and Timothy D. Lash</i> | Abstract<br>362 |

**Advances in electrochemistry of porphyrins and phthalocyanines**

Chaired by Francis D'Souza and Maurice L'Her

Grand Chenier

|         |                                                                                                                                                                                              |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Reactivity trends for surface-confined metallophthalocyanine and porphyrin complexes in electrocatalysis<br><i>José H. Zagal and Maritza Pérez</i>                                           | Abstract<br>510 |
| 2:30 pm | Asymmetric substitution of Lu(III) bisphthalocyanines: effect on the physico-chemical properties<br><i>Maurice L'Her, Arnaud Mentec, Annig Pondaven, Samia Kahlal and Jean-Yves Saillard</i> | Abstract<br>426 |
| 3:00 pm | Electrochemistry and electrocatalytic behavior of Mn and Cr phthalocyanine complexes<br><i>Tebello Nyokong and Joe Obirai</i>                                                                | Abstract<br>459 |
| 3:30 pm | Biomimetic studies of respiratory oxygen reduction using rotating electrode voltammetry<br><i>Roman Boulatov and James P. Collman</i>                                                        | Abstract<br>349 |

## Tuesday, July 13

### Plenary Lecture

#### Grand Ballroom C

|                           |                                                                                    |                 |
|---------------------------|------------------------------------------------------------------------------------|-----------------|
| 8:30 – 9:30 am            | Organization of electron transfer of metalloporphyrins<br><b>Shunichi Fukuzumi</b> | Abstract<br>319 |
| Chaired by Karl M. Kadish |                                                                                    |                 |

### SPP/JPP Award Lectures

Introduction by Karl M. Kaddish

#### Grand Ballroom C

|                                |                                                                                                                         |                 |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------|
| 4:30 – 5:00 pm                 | Organization and integration of porphyrinoid systems into nanosized donor-acceptor hybrids<br><b>Dirk Michael Guldi</b> | Abstract<br>330 |
| Chaired by Shunichi Fukuzumi   |                                                                                                                         |                 |
| 5:00 – 5:30 pm                 | Cyclic and acyclic pyrrole based anion receptors<br><b>Philip A. Gale</b>                                               | Abstract<br>329 |
| Chaired by Jonathan L. Sessler |                                                                                                                         |                 |
| 5:30 – 6:00 pm                 | Syntheses of water-soluble porphyrins<br><b>M. Graça H. Vicente</b>                                                     | Abstract<br>332 |
| Chaired by Maxwell J. Crossley |                                                                                                                         |                 |
| 6:00 – 6:30 pm                 | Bioinspired porphyrin nanoarchitectures. Rings, wires, surfaces and rotaxanes<br><b>Alan E. Rowan</b>                   | Abstract<br>331 |
| Chaired by Kevin M. Smith      |                                                                                                                         |                 |

## Tuesday, July 13/AM

### Symposia Lectures

#### Expanded porphyrins and core modified porphyrins

Chaired by Jun-ichiro Setsune and T. K. Chandrashekar

Grand Ballroom A

|          |                                                                                                                                                                                                                                                                                     |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Mixed macrocyclic oligopyrroles bearing pyrroles, thiophenes, furans, benzodipyrroles and pyridines<br><i>En-Kyung Shim, Predecepta Panda, Sung-Jin Hong, Hee-Kyung Na and <b>Chang-Hee Lee</b></i>                                                                                 | Abstract<br>429 |
| 10:30 am | Synthesis and properties of metal complexes of expanded porphyrins<br><i><b>Jun-ichiro Setsune</b> and Takafumi Yoshida</i>                                                                                                                                                         | Abstract<br>485 |
| 11:00 am | Pyrrole and arene based molecular receptors for anions<br><i><b>Franz H Kohnke</b>, Roberto Barillà and Grazia Cafeo</i>                                                                                                                                                            | Abstract<br>423 |
| 11:30 am | In vitro and in vivo anti-tumor activity of sapphyrins, a new class of tumor selective drugs<br><i><b>Darren Magda</b>, Louie Naumovski, Zhong Wang, Cecilia Cortez, Patti Thiemann, Mint Sirisawad, Philip Lecane, Jun Chen, Dong-Gyu Cho, Wen-hao Wei and Jonathan L. Sessler</i> | Abstract<br>437 |
| 12:00 pm | Manganese N-confused porphyrin complexes: structure and reactivity<br><i>John D. Harvey and <b>Christopher J. Ziegler</b></i>                                                                                                                                                       | Abstract<br>584 |

#### Non-planar porphyrins and phthalocyanines

Chaired by John A. Shelnutt and Ru-Jen Cheng

Grand Ballroom B

|          |                                                                                                                                                                                                                                                                                                        |                 |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Obedient porphyrins. Useful molecules for the nanotechnology toolbox<br><i><b>Jean-Claude Marchon</b>, Géraldine Maheut, Stéphanie Gazeau and Jacques Pécaut</i>                                                                                                                                       | Abstract<br>440 |
| 10:30 am | Axial coordination in ruffled nickel porphyrins: toward chemically actuated molecular machines<br><i><b>John A. Shelnutt</b>, Yujiang Song, Raid E. Haddad, Craig J. Medforth, Songling Jia, Saphon Hok, Daniel J. Nurco, Neal E. Schore, Stéphanie Gazeau, Jacques Pécaut and Jean-Claude Marchon</i> | Abstract<br>487 |
| 11:00 am | Effects of macrocycle nonplanarity on the photoinduced axial ligation behavior of nickel porphyrins<br><i><b>Dewey Holten</b></i>                                                                                                                                                                      | Abstract<br>400 |
| 11:30 am | NMR studies of dynamical processes in nonplanar porphyrins<br><i><b>Craig J. Medforth</b>, Raid E. Haddad and John A. Shelnutt</i>                                                                                                                                                                     | Abstract<br>445 |
| 12:00 pm | Synthetic strategies for unsymmetrically substituted nonplanar porphyrins<br><i><b>Mathias O. Senge</b></i>                                                                                                                                                                                            | Abstract<br>483 |



Tuesday, July 13/AM

**Symposia Lectures****New porphyrin architectures and host-guest chemistry. A symposium honoring Bhaskar Maiya**

Chaired by Koji Kano and Robert F. Pasternack

Grand Ballroom C

|          |                                                                                                                                                                                                                   |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Supramolecular porphyrin-fullerene conjugates: design and electron transfer reactions<br><b>Francis D'Souza</b> , Phillip M. Smith, Suresh Gadde, Melvin E. Zandler, Mitsunari Itou, Yasuyuki Araki and Osamu Ito | Abstract<br>363 |
| 10:30 am | Biopolymer-bound porphyrin assembly formation and disintegration<br><b>Robert F. Pasternack</b>                                                                                                                   | Abstract<br>465 |
| 11:00 am | Chiral memory in porphyrin aggregates: what is that for ?<br><b>Roberto Purrello</b> and Rosaria Lauceri                                                                                                          | Abstract<br>467 |
| 11:30 am | Metal-mediated supramolecular assemblies of porphyrins<br><b>Enzo Alessio</b> , Elisabetta Iengo, Silvano Geremia and Ennio Zangrando                                                                             | Abstract<br>335 |
| 12:00 pm | Molecular recognition and sensing based on porphyrin and related compounds<br><b>Tadashi Mizutani</b>                                                                                                             | Abstract<br>449 |

**Modification of hemoproteins**

Chaired by Takashi Hayashi and Yi Lu

Grand Ballroom D

|          |                                                                                                                                                                                                                                     |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Novel and efficient inhibitors of human indoleamine 2,3-dioxygenase<br><b>Eduardo Vottero</b> , Michael J. Page, Ross T.A. MacGillivray, Michel Roberge, Alban Periera, Xin-Hui Huang, Raymond J. Andersen and <b>A. Grant Mauk</b> | Abstract<br>443 |
| 10:30 am | Modification of hemoproteins by reconstititional methods<br><b>Takashi Hayashi</b> , Hideaki Sato, Takashi Matsuo and Yoshio Hisaeda                                                                                                | Abstract<br>395 |
| 11:00 am | Oxochlorin reconstituted proteins: the effect of heme ring oxygenation on structure, redox activity and reactivity<br><b>Patrick J. Farmer</b> , Brahatheeswaran Bhaskar, Michael S. Cohen, Chad E. Immoos and Thomas L. Poulos     | Abstract<br>374 |
| 11:30 am | Design and engineering of heteronuclear metalloenzymes containing heme centers<br><b>Xuan Zhao</b> , Brandy S. Russell, Thomas D. Pfister, Ningyan Wang, Hyeon K. Kim, Xiaotang Wang and <b>Yi Lu</b>                               | Abstract<br>436 |
| 12:00 pm | Rational design of metal(Schiff base)•apo-Mb for enantioselective sulfoxidation<br><b>Tomomi Koshiyama</b> , Takafumi Ueno, Masataka Ohashi and <b>Yoshihito Watanabe</b>                                                           | Abstract<br>506 |

Tuesday, July 13/AM  
**Symposia Lectures**

**Synthesis and properties of porphyrazines and their analogues**

Chaired by Pavel A. Stuzhin and M. Salomé Rodríguez-Morgade      **Grand Ballroom E**

|          |                                                                                                                                                                  |                 |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Porphyrazines: from biomedical to nanotech<br><b>Brian M. Hoffman</b>                                                                                            | Abstract<br>399 |
| 10:30 am | Contracted and expanded azaporphyrins<br><b>M. Salomé Rodríguez-Morgade</b>                                                                                      | Abstract<br>473 |
| 11:00 am | Designer porphyrazines: the importance of peripheral substituent change<br><b>Anthony G. M. Barrett and Brian M. Hoffman</b>                                     | Abstract<br>345 |
| 11:30 am | Peculiarities of porphyrazines with annulated 5-membered heteroarens. Theoretical insight and experimental facts<br><b>Pavel A. Stuzhin and Claudio Ercolani</b> | Abstract<br>495 |
| 12:00 pm | Synthesis and properties of azole derived porphyrazines and related systems<br><b>Mikhail K. Islyaikin</b>                                                       | Abstract<br>410 |

**Vitamin B<sub>12</sub> chemistry and biology**

Chaired by Yoshio Hisaeda and Wilfred van der Donk

**Grand Chenier**

|          |                                                                                                                                                                                                                                                                                                                                         |                 |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Searching for intermediates in the carbon skeleton rearrangement of 2-methyleneglutarate to (R)-3-methylitaconate catalysed by coenzyme B <sub>12</sub> -dependent 2-methyleneglutarate mutase from <i>Eubacterium barkeri</i><br><b>Bernard T. Golding, Antonio J. Pierik, Ruben Fernandez Lopez, Diana Suarez and Wolfgang Buckel</b> | Abstract<br>381 |
| 10:30 am | Enzymatic activation of coenzyme B <sub>12</sub> and the roll of the axial nucleotide<br><b>Kenneth L. Brown, Helder M. Marques, Xiang Zou, Rakesh Banka and Tilak Chandra</b>                                                                                                                                                          | Abstract<br>354 |
| 11:00 am | Electrochemical reactions mediated by hydrophobic vitamin B <sub>12</sub><br><b>Yoshio Hisaeda, Hisashi Shimakoshi, Mami Tokunaga and Takashi Hayashi</b>                                                                                                                                                                               | Abstract<br>397 |
| 11:30 am | Mechanistic studies on vitamin B <sub>12</sub> catalyzed dehalogenation of chloroalkene pollutants<br><b>Wilfred van der Donk, Derek A. Pratt and Kevin M. McCauley</b>                                                                                                                                                                 | Abstract<br>504 |
| 12:00 pm | Reining in radical reactivity: role of active site residues in catalytic fidelity in B <sub>12</sub> -dependent methylmalonyl-CoA mutase<br><b>Ruma Banerjee</b>                                                                                                                                                                        | Abstract<br>344 |

## Tuesday, July 13/PM

### Other Oral Presentations

#### Porphyrin synthesis

Chaired by Puttaiah Bhyrappa and José Cavaleiro

Grand Ballroom A

|         |                                                                                                                                                                                                                          |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Highly substituted porphyrins: synthesis and their properties<br><i>Puttaiah Bhyrappa and M. Sankar</i>                                                                                                                  | Abstract<br>517 |
| 2:20 pm | $\beta$ -Imino-meso-tetraphenylporphyrin derivatives as 2-azadienes in hetero-Diels-Alder reaction<br><i>Maria G. P. M. S. Neves, Cristina M. A. Alonso, Augusto C. Tomé, Artur M. S. Silva and José A. S. Cavaleiro</i> | Abstract<br>554 |
| 2:40 pm | Factors modulating the incorporation characteristics of porphyrins in micelles and vesicles<br><i>Uschi Simonis, Meden Isaac, Lilian Lao, Martina Vermathen and Raymond Wu</i>                                           | Abstract<br>566 |
| 3:00 pm | Metalloporphyrins in catalytical oxidative transformations of organic compounds<br><i>José A. S. Cavaleiro, Susana L. H. Rebelo, Mário M. Q. Simões, Maria G. P. M. S. Neves and Artur M. S. Silva</i>                   | Abstract<br>520 |
| 3:20 pm | Functionalizing porphyrins: electrostatic aggregation and sensors<br><i>Norbert Jux, Matthias Helmreich, Siegfried Eigler and Domenico Balbinot</i>                                                                      | Abstract<br>535 |

#### Expanded porphyrins and core modified porphyrins

Chaired by Young Key Shim and Christopher Ziegler

Grand Ballroom B

|         |                                                                                                                                                                                               |                 |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Advanced chemical models for the coordination behavior on (bacterio)-chlorophylls<br><i>Adriaan Van Gammeren, Frans Hulsbergen, Cornelis Erkelens and Huub de Groot</i>                       | Abstract<br>530 |
| 2:20 pm | Peripheral modifications on methyl pyropheophorbides for new photosensitizers<br><i>Young Key Shim, Jin-Jun Wang, Guang-Fan Han, Kee-In Lee, Jongcheol Lee, Judit Jakus and Eun Kyung Kim</i> | Abstract<br>564 |
| 2:40 pm | Photophysics and optical limiting of pentaazadentate porphyrin-like metal complexes<br><i>Wenfang Sun, Paul Barron and Fengqi Guo</i>                                                         | Abstract<br>568 |
| 3:00 pm | NMR spectroscopic investigations on interactions of chlorin e6 with small unilamellar vesicles as model membranes<br><i>Martina Vermathen, Uschi Simonis and Peter Bigler</i>                 | Abstract<br>575 |
| 3:20 pm | Dendritically encapsulated $\pi$ -extended porphyrins: synthesis, properties and applications<br><i>Sergei A. Vinogradov, Andrei V. Cheprakov, Olga S. Finikova and Raymond P. Brinas</i>     | Abstract<br>576 |

Tuesday, July 13/PM  
**Other Oral Presentations**

**Dyads, arrays and supramolecular porphyrins**

Chaired by Victor Borovkov and Fabrice Odobel

**Grand Ballroom C**

|         |                                                                                                                                                                                  |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | From 4' - to 3'-pyridyl porphyrins metal-mediated arrays<br><i>Elisabetta Iengo, E. Zangrando, E. Alessio, A. Prodi and F. Scandola</i>                                          | Abstract<br>532 |
| 2:20 pm | Supramolecular chemistry of metalloporphyrins and fullerenes: from discrete complexes to infinite assemblies<br><i>Kentaro Tashiro and Takuzo Aida</i>                           | Abstract<br>570 |
| 2:40 pm | Synthesis and photochemistry of dendrimer-linked porphyrins with redox-active pendant groups<br><i>Toshi Nagata and Yoshihiro Kikuzawa</i>                                       | Abstract<br>551 |
| 3:00 pm | Ligation of inorganic anions to ferric porphyrin covered by permethylated $\beta$ -cyclodextrin in aqueous solution<br><i>Koji Kano and Hiroaki Kitagishi</i>                    | Abstract<br>537 |
| 3:20 pm | Antenna effect with dyads consisting of an organic dye connected to a ruthenium polypyridine complex for TiO <sub>2</sub> sensitization<br><i>Fabrice Odobel and Hervé Zabri</i> | Abstract<br>556 |
| 3:40 pm | Bis-porphyrins as effective supramolecular hosts for studying chirogenic phenomena<br><i>Victor V. Borovkov, Guy A. Hembury and Yoshihisa Inoue</i>                              | Abstract<br>518 |

**Physical properties and characterization**

Chaired by Donato Monti and Athanassios Coutsolelos

**Grand Ballroom D**

|         |                                                                                                                                                                                                                                                        |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Deposition of amphiphilised porphyrin derivatives on glass. Construction of porphyrin layers for sensing applications<br><i>Donato Monti, Roberto Paolesse, Mariano Venanzi, Corrado Di Natale, Arnaldo D'Amico, Roberto Rella and Maria G. Manera</i> | Abstract<br>548 |
| 2:20 pm | Nano-structure of protonated water-insoluble porphyrin J-aggregates formed at air-water interface<br><i>Hiroshi Segawa, Jotaro Nakazaki, Masaki Sakai, Shinsuke Okada and Noriko Horikawa</i>                                                          | Abstract<br>563 |
| 2:40 pm | Gold nanocluster confined within a hexaporphyrin cage: synthesis and confinement capability<br><i>Katsuaki Konishi</i>                                                                                                                                 | Abstract<br>541 |
| 3:00 pm | Porphyrin-linked hydroxamic acid adducts for lanthanide-mediated DNA cleavage<br><i>A. G. Coutsolelos, M.-C. Chalbot, K. Kefokeris, L. Gryllos, N. Manoussakis, K. Ladomenou, C. Verchère-Béaur and M. Perrée-Fauvet</i>                               | Abstract<br>522 |
| 3:20 pm | A porphyrin nanotube based on aggregation of a Mo(V)-dodecaphenylporphyrin complex and its size-selective inclusion of tetranuclear Mo-oxo clusters<br><i>Ryosuke Harada, Hisashi Okawa, Yoshihisa Matsuda and Takahiko Kojima</i>                     | Abstract<br>540 |
| 3:40 pm | Titanium porphyrin complexes in reductive coupling and oxidative cleavage reactions<br><i>L. Keith Woo and Guodong Du</i>                                                                                                                              | Abstract<br>580 |

Tuesday, July 13/PM

**Other Oral Presentations****Porphyrin properties and applications**

Chaired by Luigi Monsu-Scolaro and Eduard Zenkevich

Grand Ballroom E

|         |                                                                                                                                                                                                                                  |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Highly stable NIR dyes for photonic applications: tetra(pentafluoro-phenyl)porphodilactone and trilactone<br><b>Gamal E. Khalil</b> , Kimberly S. Lau, Martin P. Gouterman, Christal O. Lee, James B. Callis and Larry R. Dalton | Abstract<br>538 |
| 2:20 pm | Can't touch that ! A novel, forensic application of porphyrins and phthalocyanines<br><b>Karen A. Murphy</b>                                                                                                                     | Abstract<br>550 |
| 2:40 pm | The application of magnetic circular dichroism spectroscopy to sterically hindered non-planar porphyrin ring systems<br><b>John Mack</b> , Nagao Kobayashi and Martin J. Stillman                                                | Abstract<br>545 |
| 3:00 pm | Unusual optical properties of porphyrin dendritic J-aggregates<br><b>Luigi Monsù Scolaro</b> , Andrea Romeo, Maria Angela Castriciano and Norberto Micali                                                                        | Abstract<br>547 |
| 3:20 pm | The effect of octaethylporphyrin adlayer on the electrocatalytic reduction of O <sub>2</sub> on Au(111) studied by in situ scanning tunneling microscopy<br><b>Soichiro Yoshimoto</b> , Akinori Tada and Kingo Itaya             | Abstract<br>582 |
| 3:40 pm | Key-hole principles and photochemistry of porphyrin self-organization on semiconductor quantum dots<br><b>Eduard I. Zenkevich</b> , Alexander M. Shulga, Evgeny P. Petrov, Frank Cichos and Christian von Borczyskowski          | Abstract<br>583 |

**Theory, macrocycle planarity, ruffling, spectroscopy**

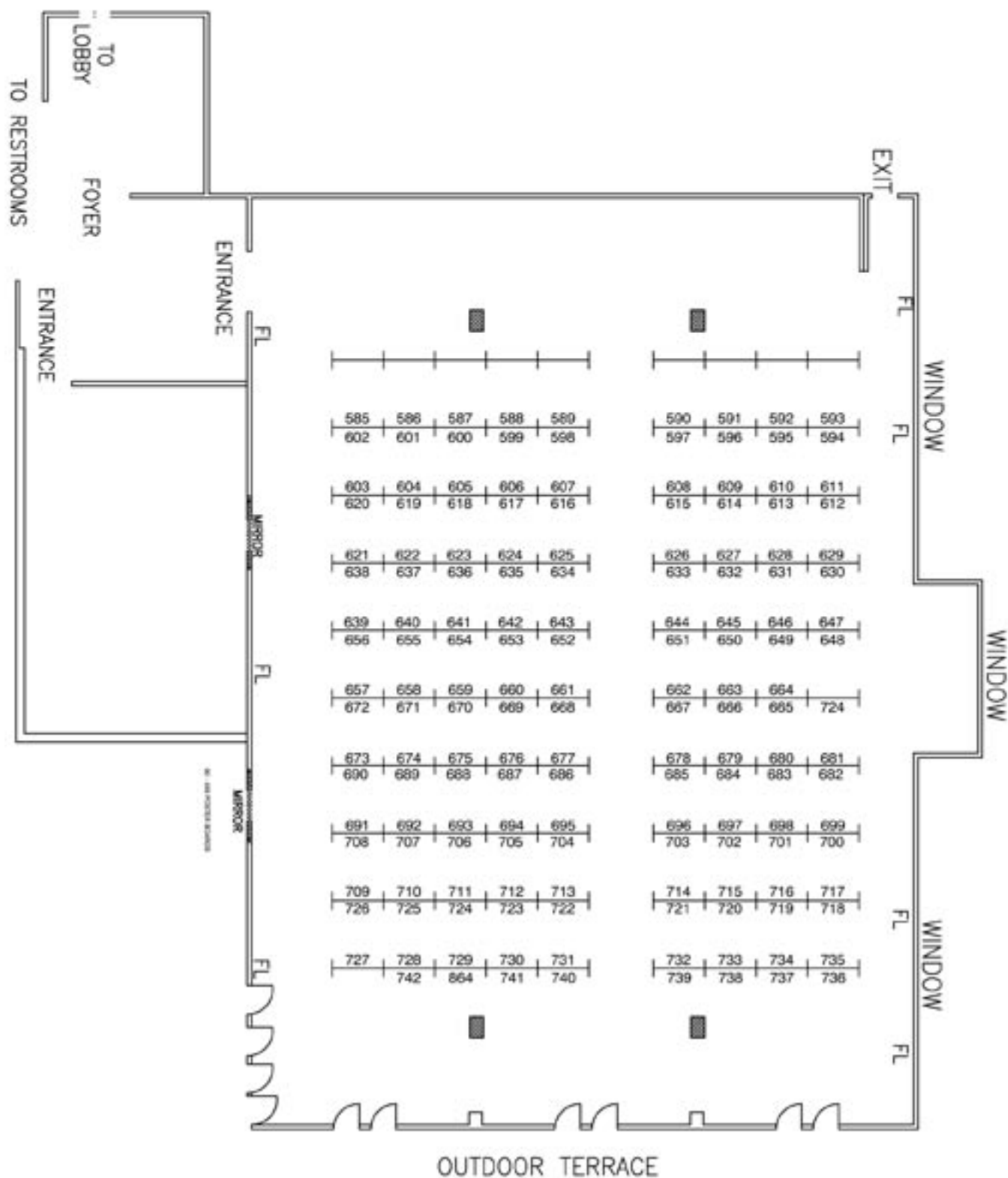
Chaired by Mikio Nakamura and Jacek Waluk

Grand Chenier

|         |                                                                                                                                                                                                                                                            |                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | DFT studies of the resonance Raman spectra of ground and excited states of free-base porphyrins and their isotopomers<br><b>Steven E. J. Bell</b> and Roma E. Oakes                                                                                        | Abstract<br>515 |
| 2:20 pm | Porphyrin ruffling revisited: artifacts, aromaticity and function<br><b>Stephen G. DiMagno</b>                                                                                                                                                             | Abstract<br>523 |
| 2:40 pm | Spin state and electron configuration of iron(III) complexes with deformed porphyrin ring<br><b>Mikio Nakamura</b> , Yoshiki Ohgo, Takanori Sakai and Akito Hoshino                                                                                        | Abstract<br>552 |
| 3:00 pm | Hydrogen-bonding and crystal packing favor a nonplanar Co(III) porphyrin conformation and unusually weak axial ligation in [Co(TPP)(benzylamine) <sub>2</sub> ](S CN). A crystallographic and DFT investigation<br><b>Orde Q. Munro</b> and Nicole Pearson | Abstract<br>549 |
| 3:20 pm | Electronic structure and spectroscopy of expanded porphyrins<br><b>Alexander Gorski</b> , Thomas Köhler, Daniel Seidel, Jonathan L. Sessler and Jacek Waluk                                                                                                | Abstract<br>577 |
| 3:40 pm | Isolated impact of ruffling on the vibrational spectrum of Ni porphyrins. Diagnosing out-of-plane distortions<br><b>M. Cather Simpson</b> and Hui-Hsu Tsai                                                                                                 | Abstract<br>567 |

**Tuesday, July 13/Evening (6:30 - 8:30 pm)**  
**Poster Presentation Map (presenting authors A-K)**

Armstrong Ballroom



## Tuesday, July 13/Evening (6:30 - 8:30 pm)

### Poster Presentations (presenting authors A-K)

#### Armstrong Ballroom

- Highly selective synthesis of differentially metallated porphyrin-appended dendrimers 585  
**Mark A. Absalom** and Maxwell J. Crossley
- $\beta$ -Substituted and *meso*-unsubstituted porphyrins with modified cores 586  
**Neeraj Agarwal** and M. Ravikanth
- The immobilized cobalt(II)-porphyrins – Efficient catalysts to the epoxidation of styrene 587  
 Olga I. Nikolaeva, Stefan S. Kurek, **Tatiana A. Ageeva**, Alexander S. Semeykin and Oskar I. Koifman
- Application of porphyrins for modification of polymer materials by plasma chemical methods 588  
**Tatiana A. Ageeva**, Valeri A. Titov, Irina A. Vershinina, Olga V. Gornukhina, Tatiana G. Shikova and Oleg A. Golubchikov
- Direct observation of morphological and spectroscopic features of chlorophyll *a* supramolecular structures at the air-water interface 589  
**Angela Agostiano**, Serena Casilli, Livia Giotta and Ludovico Valli
- Synthesis and mesomorphic behavior of Ni(II) and Zn(II) phthalocyanines with peripheral monoazacrown ethers 590  
 Fatma Yilmaz, Devrim Atilla and **Vefa Ahsen**
- Supramolecular formation between porphyrin and  $\pi$ -extended viologen derivatives and the photoinduced electron transfer reactions 590  
**Ichiro Amasaki**, Yukiyasu Kashiwagi, Yasuyuki Araki, Osamu Ito and Shunichi Fukuzumi
- Heme ruffling in nitrophorin 4, a NO transport protein from *Rhodnius prolixus* 592  
**Angela M. Amoia**, Estelle M. Maes, Sue A. Roberts, Andrzej Weichsel, Carrene Plummer, Jacqueline Brailey and William R. Montfort
- Porphyrin-based photonic switches. Basic steps toward molecule-based optoelectronics 593  
**Joakim Andreasson**, Gerdenis Kodis, Paul A. Liddell, Yuichi Terazono, Linda de la Garza, Alicia Brune, Goojin Jeong, Thomas Hartmann, Subhajit Bandyopadhyay, Heinz Durr, Reginald H. Mitchell, Ana L. Moore, Thomas A. Moore and Devens Gust
- Molecular mechanism of oxygen sensing by a heme-based sensor protein HemAT-Bs 594  
**Shigetoshi Aono**, Hidenori Yoshimura, Shiro Yoshioka, Katsuaki Kobayashi, Takehiro Ohta and Teizo Kitagawa
- Excitation energy transfer in long meso-meso linked porphyrin arrays bearing a 5,15-bisphenylethynylated porphyrin energy acceptor 595  
**Naoki Aratani**, Tae Kyu Ahn, Dongho Kim, Hitoshi Sumi and Atsuhiko Osuka
- Reaction of  $\beta$ -brominated porphycene cobalt(III) with olefins 596  
**Isao Arimoto**, Hisashi Shimakoshi, Takashi Hayashi and Yoshio Hisaeda
- Novel functionalised porphyrins via metal-catalyzed couplings 597  
**Dennis P. Arnold**, Farzad Atefi, Louisa J. Esdaile and Oliver B. Locos
- Near IR absorbing phthalocyanines 598  
**Yasin Arslanoglu** and Esin Hamuryudan

|                                                                                                                                                                                                                                                                                                                                     |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Synthetic (iron) porphyrins and antimalarial drug chloroquine: the relationship between interaction and catalytic efficiency<br><i>Ádamo C. M. A. Dos Santos and Marilda Das Doreas Assis</i>                                                                                                                                       | 599 |
| Synthesis, photophysics and phototoxic properties of a novel non-ionic water-soluble N-alkyl octasubstituted zinc(II) phthalocyanine<br><i>Josefina Awruch, Lelia E. Dicelio, Viviana Rivarola, Cristian A. Strassert, Natalia B. Rumie Vittar, Myriam E. Rodriguez, Marcos M. Faig, María F. Jaime Andreu and Eleonora Mengoni</i> | 600 |
| Supramolecular assemblies of a new class of nonplanar cationic metalloporphyrins and anionic metallo-phthalocyanines<br><i>Gianluca C. Azzellini and Marcela G. Ribeiro</i>                                                                                                                                                         | 601 |
| Hydrophobic cationic porphyrins: photophysics in homogeneous and microheterogeneous media<br><i>Gianluca C. Azzellini and Rodrigo M. Liegel</i>                                                                                                                                                                                     | 602 |
| Polyanionic and –cationic tetraphenylporphyrins<br><i>Domenico Balbinot, Uwe Hartnagel and Norbert Jux</i>                                                                                                                                                                                                                          | 603 |
| Hybrid organic-inorganic materials incorporating cobalt(III) corroles for selective trapping of carbon monoxide<br><i>Gabriel Canard, Stéphane Brandès, Jean-Michel Barbe and Roger Guillard</i>                                                                                                                                    | 604 |
| Hydroxylamine disproportionation by soluble ferric porphyrins<br><i>Sara E. Bari, Valentín Amorebieta, María Marta Gutierrez, Graciela Alluisetti, José A. Olabe and Fabio Doctorovich</i>                                                                                                                                          | 605 |
| Crown-ether appended porphyrins<br><i>Amy M. Shachter, Alan J. Gengenbach, Jon J. Barnett, Monica R. Lares, Robert E. Pereyda and Jennifer L. Ha</i>                                                                                                                                                                                | 606 |
| Mössbauer spectroscopy of peroxynitrite generated intermediates in P450 <sub>BM-3</sub><br><i>Rachel Behan, Carsten Krebs and Michael T. Green</i>                                                                                                                                                                                  | 607 |
| On the mechanism of the solvent-dependent tautomerism of inverted porphyrins<br><i>Dmitry B. Berezin, Ivan A. Mal'tsev, Alexander S. Semeykin, Andrey Yu. Panarin, Vladimir L. Bolotin and Vladimir S. Chirvony</i>                                                                                                                 | 608 |
| Tetrabenzoporphyrins as compounds related to both porphyrins and phthalocyanines<br><i>Dmitry B. Berezin, Olga V. Toldina, Olga V. Shukhto and Boris D. Berezin</i>                                                                                                                                                                 | 609 |
| Cerium(IV) tetra-15-crown-5-phthalocyaninate: synthesis and investigation<br><i>Kirill P. Birin, Yulia G. Gorbunova and Aslan Yu. Tsivadze</i>                                                                                                                                                                                      | 610 |
| Synthesis and characterization of terbium and yttrium triple-decker complexes with tetra-15-crown-5-phthalocyanine<br><i>Irina V. Biryukova, Yulia G. Gorbunova and Aslan Yu. Tsivadze</i>                                                                                                                                          | 611 |
| Models of the photosynthetic reaction centre: complex porphyrin architectures from simple and versatile coupling reactions<br><i>Iain M. Blake and Maxwell J. Crossley</i>                                                                                                                                                          | 612 |
| Effect on O <sub>2</sub> binding of substitution on tripodals porphyrins derivatives<br><i>Christian Ruzié and Bernard Boitrel</i>                                                                                                                                                                                                  | 613 |
| Synthesis and characterisation of new D2 and C2 chiral porphyrins for asymmetric catalysis<br><i>Bernard Boitrel, Valérie Baveux-Chambenoît and Philippe Richard</i>                                                                                                                                                                | 614 |



|                                                                                                                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Supramolecular structures based on the opposite charged phthalocyanines: composition, stability, catalytic activity<br><i>Ekaterina G. Petrova, Svetlana A. Borisenkova and Oleg L. Kaliya</i>               | 615 |
| Thin films of phthalocyanine derivatives for ozone and ammonia sensing<br><i>Marcel Bouvet, I. Muzikante, E. Fonavs, A. Tokmanov and R. Dobulans</i>                                                         | 616 |
| Synthesis, characterization and applications of near IR absorbing tetrapyrrolic isothiocyanato macrocycles<br><i>Wubiao Duan, Ross W. Boyle, John Greenman, Huguette Savoie and Karen Smith</i>              | 617 |
| Porphyrins, chlorins and isobacteriochlorins - NMR studies concerning NH-tautomerism<br><i>Martina Breiling, Franz-Peter Montforts and Johannes Stelten</i>                                                  | 618 |
| Metalloporphyrin-based dendritic oxygen sensor with two-photon absorbing antenna<br><i>Raymond P. Briñas and Sergei A. Vinogradov</i>                                                                        | 619 |
| Oligomers of tin(IV) porphyrins in molecular electronics<br><i>Peter R. Brotherhood and Maxwell J. Crossley</i>                                                                                              | 620 |
| Molecular tectonic and porphyrins: exploitation of atropoisomerism<br><i>Emmanuel Deiters, Véronique Bulach and Mir Wais Hosseini</i>                                                                        | 621 |
| Coordination polymers based on porphyrins with pyridine or pyridine N-oxide groups at the meso positions<br><i>Emmanuel Deiters, Véronique Bulach and Mir Wais Hosseini</i>                                  | 622 |
| Nanosized porphyrin J-aggregates<br><i>Maria Angela Castriciano, Andrea Romeo, Norberto Micali, Valentina Villari and Luigi Monsù Scolaro</i>                                                                | 623 |
| Kinetic investigation of porphyrin J-aggregates<br><i>Maria Angela Castriciano, Andrea Romeo, Norberto Micali and Luigi Monsù Scolaro</i>                                                                    | 624 |
| Novel synthesis and characterization of s-triazine containing oxygen bridged three sandwich lutetium complexes of phthalocyanines and electrochemical measurements<br><i>Tanju Ceyhan and Özer Bekaroglu</i> | 625 |
| In-situ synthesis and self-assembly of metallophthalocyanine (metal = Cu, Co) on TiO <sub>2</sub> surface<br><i>Hai-bo Pan, Nai-sheng Chen and Jin-Ling Huang</i>                                            | 626 |
| Synthesis and photochemistry properties of axially alkoxy-substituted silicon 2,3-naphthalocyanines<br><i>Xiao-yu Niu, Nai-sheng Chen and Yi-qun Wu</i>                                                      | 627 |
| An anomalous spin polarization mechanism in five-coordinate high-spin manganese(III) porphyrin complexes<br><i>Ru-Jen Cheng and Shu-Hao Chang</i>                                                            | 628 |
| Symmetry and bonding in metalloporphyrins. Control of bonding interactions by ring conformation of iron(III) porphyrins<br><i>Ru-Jen Cheng, Ping-Yu Chen, Yen-Ku Wang and Chih-Hsien Chien</i>               | 629 |
| Exploiting the molecular topology of subphthalocyanines<br><i>Christian G. Claessens, Rodrigo S. Iglesias, David González-Rodríguez and Tomás Torres</i>                                                     | 630 |
| Synthesis of carboranylpyrroles as precursors of carborane substituted macrocycles<br><i>J. Caleb Clark, Kevin M. Smith and M. Graça H. Vicente</i>                                                          | 631 |
| Porphyrin dimers as two-photon photodynamic therapy agents<br><i>Hazel A. Collins, Harry L. Anderson, Karen A. Murphy and David Phillips</i>                                                                 | 632 |
| A proposed central role for phthalocyanines in the origin of life<br><i>James Collins, Swapan S. Jain, Howard Deutsch, Frank A. L. Anet and Nicholas V. Hud</i>                                              | 633 |

- Design and synthetic approach of porphyrinic derivatives as building blocks 634  
**A. G. Coutsolelos**, G. Charalambidis, N. Matsouki, M. Grammatikopoulou, D. Daphnomili, M. Di Vaira and C. Diamantopoulos
- Self-assembly of water-soluble meso-substituted porphyrins 635  
**Joaquim Crusats**, Carlos Escudero and Josep M. Ribó
- Metal(IV)-oxo stretching vibrations in high-valent metallo-porphyrin oxides characterized by density functional theory 636  
**Arkadiusz Czader** and Roman S. Czernuszewicz
- Synthesis of porphyrin-cyclodextrin conjugates 637  
**Valerian T. D'Souza** and Jyothi Swamy
- Nonplanar heme distortions in ferricytochromes  $c_3$  as controlled by the size of the covalently linked peptide segment 638  
**Roberto Di Paolo**, Patrícia Pereira, Filipa Valente, Inês A. C. Pereira, John A. Shelnutt and Ricardo Franco
- One pot synthesis of novel quinoxaline-bridged porphyrinoids as anion and neutral receptors 639  
**Amandine Didier**, Hiromitsu Maeda, Gheorghe Dan Pantos and Jonathan L. Sessler
- A novel route to 4-alkylthio-5-alkyl-phthalonitrile and phthalocyanines derived from it 640  
**Hatice A. Dinçer** and Makbule B. Koçak
- Characterization of sulfonated porphyrins and phthalocyanines by mass spectrometry and capillary electrophoresis 641  
**Dabney W. Dixon**, Anila F. Gill and Brian R. Sook
- Uncovering the mechanisms of strong two-photon absorption in new tetrapyrroles: from relationships between linear and nonlinear absorption to structure-property relationships 642  
**Mikhail Drobizhev**, Aliaksandr Karotki, Yuliya Dzenis, Aleksander Rebane, Yurii Stepanenko, Fanqing Meng, Charles W. Spangler, Peter N. Taylor and Harry L. Anderson
- Substituent effect of  $\text{NO}_2$  on electron transfer site in reductions of quinoxalino-porphyrins 643  
**Wenbo E**, Zhongping Ou, Jianguo Shao, Karl M. Kadish and Maxwell J. Crossley
- Synthesis of novel 5,15-di[3,5-(nido-carboranylmethyl)phenyl]porphyrins 644  
**Michael W. Easson** and M. Graça H. Vicente
- Synthesis of a water-soluble cytochrome P450<sub>NOR</sub> model 645  
**Siegfried Eigler** and Norbert Jux
- Ruthenium complexes with tetra-15-crown-5-phthalocyanine and N-donor axial ligands: synthesis, structure and supramolecular chemistry studies 646  
**Yulia Yu. Enakieva**, Yulia G. Gorbunova, Sergey G. Sakharov, Sergey E. Nefedov and Aslan Yu. Tsivadze
- A study of triplet excitation energy transfer in donor-bridge-acceptor systems with conjugated bridges of varying length 647  
**Mattias Eng**, Thomas Ljungdal, Jerker Mårtensson and Bo Albinsson
- Iron bis-pocket siloxylporphyrin 648  
**Ming Fang** and Kenneth S. Suslick
- New porphyrin derivatives as photodiagnostic agents 649  
**V. V. Serra**, **Maria A. F. Faustino**, D. C. G. A. Pinto, M. G. P. M. S. Neves, Augusto C. Tomé, Arthur M. S. Silva, José A. S. Cavaleiro, S. G. Paz, M. F. C. Amador, E. F. Cruz e Silva, J. M. Cascalheira and S. K. Mendiratta

- Synthesis and characterization by mass spectrometry of beta-dinitroalkyl and beta-nitroalkenyl porphyrin derivatives 650  
*Eduarda M. P. Silva, Maria A. F. Faustino, João P. C. Tomé, M. G. P. M. S. Neves, Augusto C. Tomé, M. R. M. Domingues, A. J. Ferrer-Correia and José A. S. Cavaleiro*
- Substituted iron phthalocyanines as catalysts of the liquid-phase oxidation reactions in acidic medium 651  
*Tat'yana M. Fedorova, Valentina M. Derkacheva, Evgeny A. Luk'yanets and Oleg L. Kaliya*
- Synthesis and characterization of new phthalocyanines substituted with  $\pi$ -conjugated systems 652  
*Fernando Fernández-Lázaro, Ana-María. Gutiérrez, Luis Martín-Gomis, Javier Ortíz, Concepción Parejo, Jose-Lorenzo Rodríguez-Redondo and Ángela Sastre-Santos*
- Synthesis of extended porphyrins via oxidative aromatization 653  
*Olga S. Finikova, Sergei E. Aleshchenkov, Andrei V. Cheprakov and Sergei A. Vinogradov*
- Reactivity towards dioxygen of four dicobalt cofacial porphyrin-corroles 654  
*Laurent Frémond, Karl M. Kadish, Fabien Burdet, Claude P. Gros, Jean-Michel Barbe and Roger Guilard*
- Magneto-structural correlation in tetrakis(thiadiazole)-porphyrazines 655  
*Masato Fujimori, Yosuke Suzuki, Hirofumi Yoshikawa and Kunio Awaga*
- Construction and study of electron transfer of a supramolecular triad composed of a covalently linked zinc porphyrin dimer and fullerene bearing two axially coordinating pyridine entities 656  
*Suresh Gadde, Melvin E. Zandler, Mitsunari Itou, Yasuyuki Araki, Osamu Ito and Francis D'Souza*
- Effect of cyclic voltammetry on the crystalline order of PdPc thin solid films 657  
*Luciana Gaffo, Maria J. S. P. Brasil, Fernando Cerdeira, Carlos Giles and Wania C. Moreira*
- Coordinated oligomers of ruthenium(II) phthalocyanines with dioxocyclams 658  
*Eva M. Garcia-Frutos and Louis S. Hegedus*
- The challenge of being straight. 1. Why is the  $\{\text{Mn}(\text{NO})_2\}^8$  unit straight, in contrast to the severely cisoid-tilted  $\{\text{Fe}(\text{NO})_2\}^8$  unit ? 659  
*Jeanet Conradie, Espen Tangen and Abhik Ghosh*
- Synthesis, crystal structure, and conformation of novel C(10) spirocyclic analogues of bilirubin 660  
*Brahma Ghosh, Vincent J. Catalano and David A. Lightner*
- Photoinactivation of pathogenic non-enveloped viruses by synthetic porphyrins 661  
*M. J. Casteel, K. Jayaraj, M. Shehee, K. Jeffress, M. D. Sobsey, A. Gold and L. M. Ball*
- Synthesis, spectroscopic characterization, and reactivity of metallocorrolazine ( $\text{CzM}$ ,  $\text{M} = \text{Co}, \text{Mn}, \text{Cu}, \text{V}$ ) and triazatetrabenzcorrole (TBC) complexes 662  
*David P. Goldberg, Joseph P. Fox, Bobby Ramdhanie, Beaven S. Mandimutsira and Sheena Hailin Wang*
- Nitrogen atom transfer between metal complexes of porphyrins, corroles and salens 663  
*Galina Golubkov and Zeev Gross*
- New porphyrin building blocks for dynamic combinatorial chemistry 664  
*Diana P. N. Gonçalves and Jeremy K. M. Sanders*
- Electrosynthesis and characterization of a nickel complex with a 5,10,15,20-tetrakis(p-hydroxyphenyl)-porphyrin 665  
*Lucy González, Leonor Blanco, Boris Kharisov, Alexander Garnovskii, Enrique Longoria and Juan Costamagna*

|                                                                                                                                                                                                                                                          |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Cation-induced supramolecular organization of Co(II) and Ru(II) tetra-15-crown-5-phthalocyanines in organic solvents<br><i>Yulia G. Gorbunova, Yulia Yu. Enakieva, Lyudmila I. Demina and Aslan Yu. Tsivadze</i>                                         | 666 |
| Synthesis and biological evaluation of novel carboranylporphyrins<br><i>Vijay Gottumukkala and M. Graça H. Vicente</i>                                                                                                                                   | 667 |
| Cationic cycloimides in the di- and tetrahydroporphyrins series<br><i>Michael A. Grin, Alexander G. Tsiprovskiy and Andrey F. Mironov</i>                                                                                                                | 668 |
| Recent advances in porphyrin-corrole synthesis<br><i>Fabien Burdet, Jean-Michel Barbe, Claude P. Gros, Enrique Espinosa and Roger Guilard</i>                                                                                                            | 669 |
| Synthesis, physicochemical properties and X-ray structural characterization of copper biscalloles and porphyrin-corrole dyads<br><i>Claude P. Gros, Jean-Michel Barbe, Enrique Espinosa, Alain Tabard, Roger Guilard, Jean Fischer and Raymond Weiss</i> | 670 |
| Synthesis, characterization and photosensitizing efficacy of fluorinated photosensitizers derived from bacteriochlorophyll-a<br><i>Amy L. Gryshuk, Yihui Chen, William R. Potter, Allan Oseroff and Ravindra K. Pandey</i>                               | 671 |
| Detection of chemical warfare agent with chemical sensors<br><i>Gülşay Gümüş, İlke Gürol, Emel Musluoglu, Cihat Tasaltın, Z. Ziya Öztürk, Vefa Ahsen, M. Ali Ebeoglu, Nevin Ugur, Zafer Sen and Yadigar Arslan</i>                                       | 672 |
| Meso-furyl, meso-thienyl, mono- and tri-functionalized heteroporphyrins<br><i>Iti Gupta and M. Ravikanth</i>                                                                                                                                             | 673 |
| Synthesis and mesomorphic properties of tetra- and octa-substituted phthalocyanines<br><i>Ayşe Gül Gürek, Mahmut Durmus and Vefa Ahsen</i>                                                                                                               | 674 |
| Detection of explosive chemicals with chemical sensors<br><i>Ilke Gürol, Gülşay Gümüş, Emel Musluoglu, Cihat Tasaltın, Z. Ziya Öztürk, Vefa Ahsen, M. Ali Ebeoglu, Nevin Ugur, Zafer Sen and Yadigar Arslan</i>                                          | 675 |
| Asymmetric phthalocyanines with peripheral metal-binding sites<br><i>Marco Haas, Claudia Loosli and Silvio Decurtins</i>                                                                                                                                 | 676 |
| Spectroscopic properties of amino acid derivatives of porphyrins<br><i>Jan Habdas, Iwona Madejska and Marta Stefaniak</i>                                                                                                                                | 677 |
| Kinetics and mechanism of gold(III) incorporation into tetrakis(1-methylpyridium-4-yl)porphyrin, $H_2(TMPyP)^{4+}$ , and interaction of the gold(III) porphyrin, $[Au(TMPyP)]^{5+}$ , with DNA<br><i>Ahsan Habib, Masaaki Tabata and Yingguang Wu</i>    | 678 |
| Molecular simulations of bridged chiroporphyrins<br><i>Raid E. Haddad, Craig J. Medforth, Jean-Claude Marchon and John A. Shelnutt</i>                                                                                                                   | 679 |
| Nonlinear absorption properties of naphthalocyanines in a polymer host<br><i>Shelly J. Hakspiel, Steven R. Flom, Richard G. S. Pong, Arthur W. Snow and James S. Shirk</i>                                                                               | 680 |
| Synthetic studies directed to cofacial chlorin dimers of different symmetry<br><i>Daniella Hanke and Franz-Peter Montforts</i>                                                                                                                           | 681 |
| Synthesis and characterization of porphyrin-metallacarborane conjugates<br><i>Erhong Hao and M. Graça H. Vicente</i>                                                                                                                                     | 682 |

- Efficient synthesis of biomedically-significant monoaspartyl chlorin  $e_6$  and its constitutional isomers 683  
**Jodie A. Hargus, M. Graça H. Vicente and Kevin M. Smith**
- Charge separation in coulomb complexes of cationic metalloporphyrins and  $C_{60}$  dendrimer polycarboxylates 684  
**Uwe Hartnagel, Maria Hatzimarinaki, Domenico Balbinot, Andreas Hirsch, Norbert Jux and Dirk M. Guldi**
- Dianionic and trianionic macrocycles in cobalt N-confused porphyrin complexes 685  
**John D. Harvey and Christopher J. Ziegler**
- Novel photovoltaic cells using supramolecular assembly with clusterization of fullerenes with porphyrin dendrimers and porphyrin-alkanethiolate protected-gold nanoparticles 686  
**Taku Hasobe, Yukiyasu Kashiwagi, Mark A. Absalom, Kohei Hosomizu, Maxwell J. Crossley, Hiroshi Imahori, Prashant V. Kamat and Shunichi Fukuzumi**
- Reactivity of expanded porphyrins 687  
**Hiroshi Hata, Hiroshi Shinokubo and Atsuhiko Osuka**
- Novel crown ether porphyrin conjugates 688  
**Matthias Helmreich and Norbert Jux**
- Synthesis and photophysics of fullerene-dendrimer-pyropheophorbide-conjugates 689  
**Matthias Helmreich, Evgeni Ermilov, Fiorenza Rancan, Fritz Böhm, Beate Roeder, Andreas Hirsch and Norbert Jux**
- Insertion of CO and alkenes to organopalladium complexes of bidentate porphyrin ligand 690  
**Yuka Hirose, Sachiko Tanikawa and Jun-ichiro Setsune**
- Synthesis and characterization of highly deformed phthalocyanines obtained by  $\alpha$ -phenyl substitutions 691  
**Shigetsugu Homma, Takamitsu Fukuda and Nagao Kobayashi**
- Substituent effect on the structure and photophysical properties of porphyrin molecular assemblies 692  
**Kohei Hosomizu, Hiroshi Imahori, Yukie Mori, Tomoo Sato, Tae Kyu Ahn, Seong Keun Kim, Dongho Kim, Yoshinobu Nishimura, Iwao Yamazaki and Yoshihiro Matano**
- Study of high-spin hindered imidazole iron(II) porphyrinate complexes 693  
**Chuanjiang Hu, Arne Roth, Mary K. Ellison, Jin An, Charles E. Schulz and Robert W. Scheidt**
- A silicon (IV) phthalocyanine axially substituted by nipagin: synthesis, characterization, complexation with protein and photodynamic activities 694  
**Jian-Dong Huang, Guo-Cai Zhang, Jian-Cheng Sun, Nai-sheng Chen and Jin-Ling Huang**
- Carboxylated phthalocyanine-protein conjugates: preparation, spectroscopic properties, and photosensitivities 695  
**Jian-Dong Huang, Yan-Mei Chen, Nai-Sheng Chen, Jin-Ling Huang and Dennis K. P. Ng**
- Bis(pyrrole-amides) as potential anion receptors 696  
**Michael T. Huggins, Dustin Dixon and Mandy Harrison**
- Nanosized catalysts based on iron porphyrinosilica as cytochrome P450 model 697  
**Yassuko Iamamoto, Alba D. Q. Ferreira, Fábio S. Vinhado, Luciano A. Montoro, José M. Rosolen, Otaciro R. Nascimento, Rebeca B. Curi and Maria Sílvia M. Moreira**
- A tunable perylene-porphyrin assembly 698  
**Elisabetta Iengo, E. Alessio, R. Dobrawa, F. Würthener, A. Prodi and F. Scandola**
- Helicity induction in zinc(II) meso, meso-coupled porphyrin oligomers via hydrogen bonding interaction with guest molecules 699  
**Chusaku Ikeda, Hidenari Inoue and Atsuhiko Osuka**

|                                                                                                                                                                                                                                                                                      |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Synthesis and magnetic properties of singly and triply linked porphyrin dimers metalated with paramagnetic metal ions<br><i>Takahisa Ikeue, Naoki Aratani, Ko Furukawa, Tatsuhisa Kato and Atsuhiko Osuka</i>                                                                        | 700 |
| Electronic state and coordination structures of manganese(III) porphyrin complexes<br><i>Akira Ikezaki and Mikio Nakamura</i>                                                                                                                                                        | 701 |
| Influence of the metal ion and the non-peripheral substituents on distortion of the phthalocyanine macrocycle<br><i>Benjamin Isare, Paul M. Burnham, Isabelle Chambrier, Michael J. Cook and David L. Hughes</i>                                                                     | 702 |
| Multi-phthalocyanine nano-architecture<br><i>Benjamin Isare, Joseph Sly, Alan E. Rowan, Roeland J. M. Nolte and Michael J. Cook</i>                                                                                                                                                  | 703 |
| Photoelectron conversion activity of chlorophyll derivatives on electrodes modified with thin films<br><i>Syuichi Ishigure, Masaharu Kondo, Yoshiharu Suemori, Morio Nagata, Yutaka Amao and Mamoru Nango</i>                                                                        | 704 |
| N-Fused systems<br><i>Tomoya Ishizuka, Alagar Srinivasan, Motoki Toganoh, Atsuhiko Osuka and Hiroyuki Furuta</i>                                                                                                                                                                     | 705 |
| Triazoleporphyrazines - An example of intrinsic switch on/off of aromaticity<br><i>Mikhail K. Islyaikin, Victor R. Ferro, Olga G. Khelevina and J. M. Garcia de la Vega</i>                                                                                                          | 706 |
| Synthesis and properties of substituted thiadiazoleporphyrinoid metal complexes<br><i>Mikhail K. Islyaikin, Elena A. Danilova, Olga V. Bogatcheva, Anna N. Kalyenova, Tat'yana N. Lomova, Salome Rodríguez-Morgade and Tomás Torres</i>                                              | 707 |
| Investigation of the radical intermediates formed in the heme catalase-peroxidase of <i>Synechocystis</i> PCC6803 by using multifrequency (high- field) EPR spectroscopy and site-directed mutagenesis<br><i>Anabella Ivancich, Christa Jakopitsch, Sun Un and Christian Obinger</i> | 708 |
| Synthesis and investigations of new phosphorus-containing phthalocyanine compounds<br><i>Alexey V. Ivanov, Xenia V. Kabanova and Sergey E. Nefedov</i>                                                                                                                               | 709 |
| Cis-effect of halide ions ligation in the dissociation of tetrapyrrolic macrocycles with IIIa group metals<br><i>Svetlana S. Ivanova and Pavel A. Stuzhin</i>                                                                                                                        | 710 |
| Template condensation of In(III) complexes of porphyrins and porphyrazines with phthalodinitrile<br><i>Svetlana S. Ivanova and Pavel A. Stuzhin</i>                                                                                                                                  | 711 |
| Synthesis of pyrrole containing nucleosides via palladium catalyzed cross-coupling reactions<br><i>Jonathan L. Sessler and Janarthanan Jayawickramarajah</i>                                                                                                                         | 712 |
| Acylation of meso-tetraarylporphyrins. Recent developments of a versatile reaction<br><i>Christophe Jeandon, Romain Ruppert and Henry J. Callot</i>                                                                                                                                  | 713 |
| Surfactant effects on excited state relaxation of water soluble VO(IV) porphyrins by Raman and time-resolved spectroscopies<br><i>Dae Hong Jeong, Dae Won Cho and Dongho Kim</i>                                                                                                     | 714 |
| Synthesis of bis(porphyrin) sandwich complexes with [60] fullerene<br><i>Lijuan Jiao and Kevin M. Smith</i>                                                                                                                                                                          | 715 |
| Reception replaced 6,7-quinoxalinedicarbonitriles and application in synthesis of analogues phthalocyanines<br><i>Valeriy V. Kalashnikov and Larisa G. Tomilova</i>                                                                                                                  | 716 |
| Synthesis of 4,5-bis(cyclohexylmethoxy)phthalonitrile and phthalocyanines with rare-earth metals<br><i>Irina P. Kalashnikova and Larisa G. Tomilova</i>                                                                                                                              | 717 |

- Synthesis and spectral properties of hexadecabenzyloxy-phthalocyanines with rare-earth elements 718  
**Irina P. Kalashnikova and Larisa G. Tomilova**
- Synthesis and characterization of unsymmetrically substituted metallophthalocyanines 719  
**Ayfer Kalkan and Zehra Altuntas Bayır**
- Double-decker lanthanide(III) phthalocyanines with peripheral substituted alcohol sulfanyl units 720  
**Mehmet Kandaz**
- Synthesis, characterization and spectroscopic studies of the condensation of reactive tetradiethylmalonate substituted phthalocyanines (Pd<sup>II</sup>, Co<sup>II</sup>, Cu<sup>II</sup>) with substituted functional amines 721  
**Mehmet Kandaz and Semra Keskin**
- A synthetic study on cyclic porphyrin oligomers connected by acetylenes 722  
**Ken-ichi Sugiura, Aiko Kato, Hitoshi Miyasaka, Hiroyuki Tanaka, Tomoji Kawai, Manabu Sugimoto and Masahiro Yamashita**
- Synthesis and characterization of 5,15-diazaporphyrins and 10,20-diaryl-5,15-diazaporphyrins 723  
**Shigeki Kawabata, Atsuhiko Osuka and Katsuyuki Youfu**
- Synthesis of phthalocyanines at low temperature 724  
**Boris Kharisov, L. A. Garza Rodriguez, K. P. Coronado Cerda, Y. I. Avila Vega, R. Ramirez, U. Ortiz Mendez, L. M. Blanco Jerez and M. A. Mendez-Rojas**
- Synthetic strategies for construction of porphyrin-based molecular lattices 725  
**Tony Houry and Maxwell J. Crossley**
- Oxygenation of olefins using water as an oxygen source via electron transfer, catalyzed by manganese porphyrins 726  
**Takashi Kishi, Tetsuya Ojiri, Ken Okamoto, Seiji Ogo and Shunichi Fukuzumi**
- Peculiarities of inter-metal nitrogen atom transfer from nitridomanganese(V) to manganese(III) and chromium(III) tetraphenylporphyrins and octaphenyltetraazaporphyrins 727  
**Marija E. Klyueva, Pavel A. Stuzhin, Natalya V. Repina and Mikhail V. Klyuev**
- Structure – reactivity relationship for copper(II) and manganese(III) meso-phenylsubstituted octaalkylporphyrins 728  
**Marija E. Klyueva, Olga V. Kosareva, Ekaterina N. Kiseleva, Mikhail V. Klyuev and Tatyana N. Lomova**
- A colormap analysis method for visual presentation of the skeletal deformations of phthalocyanine derivatives-Collective Yugamatica drawings 729  
**Nagao Kobayashi and Takamitsu Fukuda**
- Efficient two photon absorption of butadiyne-linked bisporphyrin for photodynamic therapy application 730  
**Yoshiaki Kobuke, Kazuya Ogawa, Kenji Kamada and Koji Ohta**
- The influence of steric tension and zinc porphyrin stability in media with active oxygen 731  
**Svetlana V. Zajceva, Sergey A. Zdanovich, Aleksandr S. Semeikin and Oskar I. Koifman**
- The renaissance of tetrathiaareneporphyrazines 732  
**Oskar I. Koifman, Andrey B. Korzhenevsky, Elena V. Krylova and Alexey A. Zelenov**
- Development of method for the synthesis metallocomplexes of tert-butylsubstituted tetraquinoline-porphyrazine 733  
**Oskar I. Koifman, Andrey B. Korzhenevsky and Svetlana V. Efimova**
- Electron transfer of poly(ethylenimine)-linked meso-porphyrin derivatives on a gold electrode modified with self-assembled monolayer 734  
**Masaharu Kondo, Yoshiharu Suemori, Morio Nagata, Takehisa Dewa, Keiji Yamashita and Mamoru Nango**

|                                                                                                                                                                                                                                                                 |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| In vivo biolocalization of novel porphyrin- $\beta$ -cyclodextrin conjugates in different tissues of tumor model animals<br><i>Vladimír Král, Alla Synytsya, Jarmila Králová, Pavla Poucková and Karel Volka</i>                                                | 735 |
| Porphyrin architectures for the measurement of proton-coupled electron transfer: synthesis and time-resolved laser spectroscopy<br><i>Alexander Krivokapić, Justin M. Hodgkiss and Daniel G. Nocera</i>                                                         | 736 |
| Stereochemistry of 4+1 and 4+2 coordinated magnesium phthalocyaninato complexes. Catalytic properties of magnesium phthalocyanine<br><i>Jan Janczak and Ryszard Kubiak</i>                                                                                      | 737 |
| Novel porphyrinoid chromophores<br><i>M. Ravi Kumar and Kevin M. Smith</i>                                                                                                                                                                                      | 738 |
| Carboranyl monothiaporphyrin: synthesis and biological studies<br><i>M. Ravi Kumar and M. Graça H. Vicente</i>                                                                                                                                                  | 739 |
| Syntheses and properties of porphyrins bearing azulene<br><i>Kei Kurotobi and Atsuhiro Osuka</i>                                                                                                                                                                | 740 |
| Disproportionation of NO by low-temperature sublimed layers of meso-tetraphenylporphyrinato manganese(II)x<br><i>Garik G. Martirosyan, Arsen S. Azizyan, Tigran S. Kurtikyan and Peter C. Ford</i>                                                              | 741 |
| Highly stable NIR dyes for photonic applications: effects of light and oxygen on the synthesis of tetra(pentafluorophenyl)porphodilactone<br><i>Kimberly S. Lau, Gamal E. Khalil, Martin P. Gouterman, Christal O. Lee, James B. Callis and Larry R. Dalton</i> | 742 |
| Synthesis and characterization of 5,10,15,20-tetra(N-ethyl-3-carbazoyl) porphyrin and its manganese, cobalt, nickel, copper, and zinc complexes<br><i>Cynthia P. Tidwell, Martin G. Bakker, Ken Belmore, L. Dalila Fondren and David E. Nikles</i>              | 864 |



## Wednesday, July 14

### Lifetime Achievement Award Lectures

Introduction by Jonathan L. Sessler

Grand Ballroom C

|                           |                                                                                                                                                                          |                 |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 8:30 - 9:30 am            | The combination of porphyrins and phthalocyanines with macromolecules – The way from nature to new synthetic materials with promising properties<br><b>Dieter Wöhrle</b> | Abstract<br>328 |
| Chaired by Tomás Torres   |                                                                                                                                                                          |                 |
| 9:30 - 10:00 am           | Axial and equatorial coordination chemistry of metal complexes with tetrapyrrole ligands<br><b>Johann Walter Buchler</b>                                                 | Abstract<br>326 |
| Chaired by Kevin M. Smith |                                                                                                                                                                          |                 |
| 10:00 - 10:30 am          | <i>Coffee Break</i>                                                                                                                                                      |                 |
| 10:30 – 11:00 am          | Saddling, coordination parameters and the $S = 3/2$ , $5/2$ admixed spin state in ferric porphyrins and heme proteins<br><b>Raymond Weiss</b>                            | Abstract<br>327 |
| Chaired by Roger Guilard  |                                                                                                                                                                          |                 |
| 11:00 – 12:00 pm          | Tracking nature's pathways to the pigments of life<br><b>Alan R. Battersby</b>                                                                                           | Abstract<br>325 |
| Chaired by Kevin M. Smith |                                                                                                                                                                          |                 |
| 2:00 - 4:30 pm            | Natchez Boat Trip                                                                                                                                                        | See Map         |
| 7:30 - 10:30 pm           | Conference Banquet                                                                                                                                                       | See Map         |

# Thursday, July 15

## Plenary Lectures

### Grand Ballroom C

---

|                          |                                                                                                       |                 |
|--------------------------|-------------------------------------------------------------------------------------------------------|-----------------|
| 8:30 – 9:30 am           | Novel NO-releasing heme proteins from the saliva of two blood-sucking insects<br><i>F. Ann Walker</i> | Abstract<br>323 |
| Chaired by Gerd La Mar   |                                                                                                       |                 |
| 5:00 – 6:00 pm           | Cytochrome c: a genomic approach<br><i>Ivano Bertini</i>                                              | Abstract<br>317 |
| Chaired by Harry B. Gray |                                                                                                       |                 |

---

## Thursday, July 15/AM

### Symposia Lectures

#### Medical applications of photodynamic therapy

Chaired by Johan E. van Lier and David Dolphin

#### Grand Ballroom A

|          |                                                                                                                                                                                                                                                    |                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | New indications for PDT using a new photosensitiser<br><b>Julia G. Levy</b>                                                                                                                                                                        | Abstract<br>432 |
| 10:30 am | Photodynamic therapy: mechanisms of optimization<br><b>Tayyaba Hasan, Nicolas Solban, Irene Georgakoudi, William Rice, Juan Benavides and Charles Lin</b>                                                                                          | Abstract<br>394 |
| 11:00 am | Strategies for selective delivery of photodynamic sensitizers to biological targets<br><b>Ross W. Boyle, John Greenman, Rob Hudson, Huguette Savoie, Martin Scobie, Baolu Shi and Karen Smith</b>                                                  | Abstract<br>351 |
| 11:30 am | Synthesis and characterization of novel metalloporphyrins used for MRI of necrotic tissue<br><b>Johannes Platzek, G. Baude, M. Brehm, G. Depke, W. Ebert, T. Frenzel, G. Michl, U. Niedballa, D. Sülzle, H. Schmitt-Willich and H. J. Weinmann</b> | Abstract<br>466 |
| 12:00 pm | Structure activity relationships of amphiphilic trisulfonated zinc phthalocyanines substituted with alkynyl side chains<br><b>Johan E. van Lier</b>                                                                                                | Abstract<br>505 |

#### Synthesis, structure and properties of new phthalocyanines

Chaired by Nagao Kobayashi and Clifford C. Leznoff

#### Grand Ballroom B

|          |                                                                                                                       |                 |
|----------|-----------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Unusual synthesis of phthalocyanines<br><b>Özer Bekaroglu</b>                                                         | Abstract<br>346 |
| 10:30 am | Perfluoroalkyl phthalocyanines: from cancer therapy to oxidation of alkanes<br><b>Sergiu M. Gorun</b>                 | Abstract<br>383 |
| 11:00 am | Synthesis, spectral and redox properties of antimony-phthalocyanines absorbing infrared light<br><b>Hiroaki Isago</b> | Abstract<br>408 |
| 11:30 am | Chemistry of sandwich-type tetrapyrrole rare earth complexes<br><b>Jianzhuang Jiang</b>                               | Abstract<br>411 |

Thursday, July 15/AM

**Symposia Lectures****Supramolecular assemblies for electron transfer**

Chaired by Hiroshi Imahori and Dirk Guldi

Grand Ballroom C

|          |                                                                                                                                                                                                                                     |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Photoinduced electron transfer in porphyrin-fullerene dyads in solid molecular triads<br><b>Helge Lemmetyinen</b> , Nikolai V. Tkachenko, Tommi Vuorinen, Vladimir Chucharev and Alexander Efimov                                   | Abstract<br>430 |
| 10:30 am | Photoinduced electron transfer in interlocked structures containing porphyrins<br><b>Lucia Flamigni</b>                                                                                                                             | Abstract<br>376 |
| 11:00 am | A photocurrent-generator utilizing a polyelectrolyte as a matrix of dyes and an effect by the addition of titania particle<br><b>Atsushi Ikeda</b> , Youichi Tsuchiya, Toshifumi Konishi and Jun-ichi Kikuchi                       | Abstract<br>404 |
| 11:30 am | Photoinduced electron transfer in novel porphyrin-fullerene hybrids: rotaxanes, catenanes, pseudocatenanes and molecular wires<br><b>David I. Schuster</b> , Ke Li, Sean A. Vail, Luis Echegoyen and Dirk M. Guldi                  | Abstract<br>481 |
| 12:00 pm | Self-assembled monolayers of porphyrins on ITO electrodes and metal nano-clusters as artificial photosynthetic systems<br><b>Hiroshi Imahori</b> , Yukiyasu Kashiwagi, Taku Hasobe, Shunichi Fukuzumi, Yasuyuki Araki and Osamu Ito | Abstract<br>406 |

**Porphyrinic pigment membrane interactions**

Chaired by Uschi Simonis and Benny Ehrenberg

Grand Ballroom D

|          |                                                                                                                                                                                                                                                                                                                |                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | The dynamics of interactions of porphyrins and analogs with membranes control their sub-cellular localization<br><b>Daniel Brault</b>                                                                                                                                                                          | Abstract<br>352 |
| 10:30 am | Porphyrins as probes of the mitochondrial permeability transition<br><b>Fernanda Ricchelli</b>                                                                                                                                                                                                                 | Abstract<br>470 |
| 11:00 am | Biophysical properties of membranes affect the uptake, topography and efficiency of photosensitizers<br><b>B. Ehrenberg</b> , I. Bronshtein, M. Kepczynski and Kevin M. Smith                                                                                                                                  | Abstract<br>369 |
| 11:30 am | Influence of tetrapyrrole amphiphilicity on membrane localization and the mechanism of photosensitized cell death<br><b>B. Röder</b> , Steffen Hackbarth, A. Wiehe, Fiorenza Rancan, Norbert Jux, Matthias Helmreich, Andreas Hirsch, Evgeni Ermilov, Mathias O. Senge, M. Nöbel, S. al Omari and K. Simonenko | Abstract<br>472 |
| 12:00 pm | Control of the biodistribution and phototherapeutic activity of phthalocyanines through suitable engineering of their chemical structure<br><b>Giulio Jori</b>                                                                                                                                                 | Abstract<br>412 |

Thursday, July 15/AM

**Symposia Lectures****Theoretical aspects of the electronic structures of phthalocyanines, porphyrins and analogs**

Chaired by Martin Stillman and Abhik Ghosh

Grand Ballroom E

|          |                                                                                                                                                                                                                                                                                               |                 |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Time-dependent DFT applications to porphyrins and phthalocyanines: high accuracy combined with the simplicity of molecular orbital and fragment orbital analysis of the character and intensity distribution of excitations<br><i>Evert Jan Baerends, Angela Rosa and Giampaolo Ricciardi</i> | Abstract<br>341 |
| 10:30 am | High-level quantum-chemical calculations on metalloporphyrins and related species: can we improve on density-functional theory results? And do we need to?<br><i>Peter R. Taylor</i>                                                                                                          | Abstract<br>501 |
| 11:00 am | Computational modeling of heme proteins using mixed quantum mechanics / molecular mechanics (QM/MM) methods<br><i>Richard A. Friesner</i>                                                                                                                                                     | Abstract<br>377 |
| 11:30 am | Competitive metabolism of substrates by P450 compound I: addressing the role of model/protein factors in determining relative transition state barrier heights and positions<br><i>Danni L. Harris and David E. Woon</i>                                                                      | Abstract<br>393 |
| 12:00 pm | Studies of molecular magnetism of lanthanide-phthalocyanine complexes based on simultaneous determination of f-electronic structures<br><i>Naoto Ishikawa</i>                                                                                                                                 | Abstract<br>409 |

**Synthesis and properties of corroles and other ring-contracted systems**

chaired by Daniel Gryko and David Goldberg

Grand Chenier

|          |                                                                                                                                |                 |
|----------|--------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Metallocorroles as sensing components for CO<br><i>Roger Guilard</i>                                                           | Abstract<br>390 |
| 10:30 am | Recent advances in the synthesis of meso-substituted corroles<br><i>Daniel T. Gryko</i>                                        | Abstract<br>389 |
| 11:00 am | Metallocorrolazines: synthesis and reactivity of a Mn(V)-oxo complex<br><i>David P. Goldberg</i>                               | Abstract<br>379 |
| 11:30 am | Preparation and exploitation of functionalized corroles<br><i>Roberto Paolesse and Sara Nardis</i>                             | Abstract<br>464 |
| 12:00 pm | Photophysics of corroles<br><i>Harry B. Gray, Karn Sorasaene, Jeremy J. Weaver, Mayra Sheikh, Atif Mahammed and Zeev Gross</i> | Abstract<br>385 |

## Thursday, July 15/PM

### Other Oral Presentations

#### Medical and PDT

Chaired by Alexander Pallenberg and Dabney Dixon

Grand Ballroom A

|         |                                                                                                                                                                                         |                 |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Superoxide reactivity of KatG: insights into isoniazid resistance pathways in TB<br><b>Reza A. Ghiladi</b> , Diane E. Cabelli and Paul R. Ortiz De Montellano                           | Abstract<br>528 |
| 2:20 pm | Industrial preparation of HPPH, an effective photosensitizer for photodynamic therapy<br><b>Alexander J. Pallenberg</b> , Ravindra K. Pandey, James C. Chen and Thomas J. Dougherty     | Abstract<br>557 |
| 2:40 pm | Synthesis of cationic isothiocyanato diphenyl porphyrins, and their bioconjugation for targeted photodynamic therapy<br><b>Nela Pesa</b> , Karen Smith, John Greenman and Ross W. Boyle | Abstract<br>558 |
| 3:00 pm | Phthalocyanines as efficient phototherapeutic agents for microbial infections<br><b>Giulio Jori</b> and <b>Gabrio Roncucci</b>                                                          | Abstract<br>559 |
| 3:20 pm | Phthalocyanines as agents against HIV-1<br><b>Dabney W. Dixon</b> , Luigi G. Marzilli, Andrei N. Vzorov and Richard W. Compans                                                          | Abstract<br>525 |

#### Phthalocyanines

Chaired by Christian Claessens and Larisa Tomilova

Grand Ballroom B

|         |                                                                                                                                                                                                                     |                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Synthesis and X-ray crystal structure of a heterobimetallic (Cr, Mn) heteroleptic (porphyrinato-phthalocyaninato)-single-atom bridged species<br><b>Maria Pia Donzello</b> , Claudio Ercolani and Corrado Rizzoli   | Abstract<br>526 |
| 2:20 pm | The investigation of metal phthalocyanine complexes as catalysts in reduction and chlorination of aromatic reactions<br><b>Alexey V. Ivanov</b> , Eugenia G. Kogan, Mihail Yu. Tsentalovitch and Larisa G. Tomilova | Abstract<br>534 |
| 2:40 pm | Structure and stability of lanthanide porphyrinates and phthalocyaninates<br><b>Tatyana N. Lomova</b>                                                                                                               | Abstract<br>544 |
| 3:00 pm | Photochemical and photophysical properties of various phthalocyanines<br><b>M. David Maree</b>                                                                                                                      | Abstract<br>546 |
| 3:20 pm | Metallosupramolecular chemistry with subphthalocyanines<br><b>Christian G. Claessens</b>                                                                                                                            | Abstract<br>521 |
| 3:40 pm | Different type phthalocyanines: synthesis and investigation<br><b>Larisa G. Tomilova</b> , Igor V. Zhukov, Alexey V. Ivanov, Alexander Yu. Tolbin, Victor E. Pushkarev and Nikolai S. Zefirov                       | Abstract<br>572 |

Thursday, July 15/PM  
**Other Oral Presentations**

### Dyads, arrays and supramolecular porphyrins

Chaired by Romain Ruppert and Ludovico Valli

Grand Ballroom C

|         |                                                                                                                                                                                                                                                                                                    |                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Porphyrins as ligands: dimers and oligoporphyrins linked by metal ions<br><b>Romain Ruppert</b>                                                                                                                                                                                                    | Abstract<br>560 |
| 2:20 pm | Deposition, characterisation and properties of Langmuir-Shäfer films of fullerene and porphyrin derivatives<br><i>Serena Casilli, Sabrina Conoci, Dirk M. Guldi, Sara Nardis, Roberto Paolesse, Maurizio Prato, Giampaolo Ricciardi, M. Graça H. Vicente, Israel Zilbermann and Ludovico Valli</i> | Abstract<br>574 |
| 2:40 pm | Static and dynamic aspects of antenna functions of nonameric porphyrin assemblies<br><b>Yasuhisa Kuroda</b>                                                                                                                                                                                        | Abstract<br>542 |
| 3:00 pm | Supramolecular self-assembly of metalloporphyrin complex in Langmuir and Langmuir-Blodgett films<br><b>Qun Huo and Yuhua Ni</b>                                                                                                                                                                    | Abstract<br>531 |
| 3:20 pm | Allosteric molecular recognition systems based on porphyrin scaffold<br><b>Masayuki Takeuchi and Seiji Shinkai</b>                                                                                                                                                                                 | Abstract<br>569 |
| 3:40 pm | Hetero-porphyrin nanotubes and nanorods<br><b>Zhongchun Wang and John A. Shelnutt</b>                                                                                                                                                                                                              | Abstract<br>578 |
| 4:00 pm | Preparation and properties of $\pi$ -system-fused porphyrin oligomers<br><b>Hidemitsu Uno, Kenji Kuroki, Hiroko N. Yamada and Noboru Ono</b>                                                                                                                                                       | Abstract<br>573 |

### Heme proteins, cytochromes and biological materials

Chaired by J. Timothy Sage and Yasuhiko Yamamoto

Grand Ballroom D

|         |                                                                                                                                                                                                                                         |                 |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | High-valent iron in chemistry and biology. Electronic-structural diversity in heme versus nonheme iron-oxo and –imido complexes<br><i>Espen Tangen, Hege Ryeng and Abhik Ghosh</i>                                                      | Abstract<br>529 |
| 2:20 pm | NO reduction by fungal and bacterial nitric oxide reductases<br><b>Yoshitsugu Shiro, Hideyuki Kumita, Tomoya Hino, Koji Matsuura, Satoshi Takahashi, Hiroshi Hori and Yoshihiro Fukumori</b>                                            | Abstract<br>565 |
| 2:40 pm | Quantitative vibrational dynamics of iron in porphyrins and proteins<br><b>J. T. Sage, B. Leu, W. Zeng, G. Georgiev, D. C. Wharton, Graeme R. A. Wyllie, W. Robert Scheidt, M. Z. Zgierski, S. M. Durbin, W. Sturhahn and E. E. Alp</b> | Abstract<br>561 |
| 3:00 pm | $^{13}\text{C}$ -NMR signals of iron bound cyanide ions in ferric heme proteins: a sensitive probe to study an active site environment of heme protein<br><b>Hiroshi Fujii</b>                                                          | Abstract<br>527 |
| 3:20 pm | Characterizing the intramolecular “signal” in heme oxygen sensing/signaling proteins<br><i>Christine M. Suquet, Mark S. Nissen, HaJeung Park, Jaroslava Mikšová, ChulHee Kang, Randy W. Larsen and James D. Satterlee</i>               | Abstract<br>562 |
| 3:40 pm | Determinants of redox function in cytochrome <i>c</i><br><i>Naoki Tachiiri, Shin-ichi Joseph Takayama, Norifumi Terui, Hajime Mita, Hikaru Hemmi, Yoshihiro Sambongi and Yasuhiko Yamamoto</i>                                          | Abstract<br>581 |

Thursday, July 15/PM  
**Other Oral Presentations**

**Synthesis, structure and reactivity**

Chaired by Martin Bröring and Bruno Andrioletti

Grand Ballroom E

|         |                                                                                                                                                                                                                                                            |                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Factors effecting the chemical reactivity of NH-bonds in porphyrin molecules<br><b>Dmitry B. Berezin</b> and Boris D. Berezin                                                                                                                              | Abstract<br>516 |
| 2:20 pm | Biomimetic use of superoxide for the preparation and transformation of metalloporphyrinoids<br><b>Martin Bröring</b> , Christian Hell and Dirk Penno                                                                                                       | Abstract<br>519 |
| 2:40 pm | Application of sublimed layers methodology for spectral study of NO <sub>x</sub> interaction with metalloporphyrins<br><b>Tigran S. Kurtikyan</b> and Peter C. Ford                                                                                        | Abstract<br>543 |
| 3:00 pm | Detection of plural key intermediates of Ru-porphyrins in the photochemical oxygenation with water as both electron and oxygen atom donor<br>Akihiro Kumagai, Tetsuya Shimada, Satoshi Hamatani, Hiroshi Tachibana, Shinsuke Takagi and <b>Haruo Inoue</b> | Abstract<br>533 |
| 3:20 pm | Acidoporphyrin complex stability in solution<br><b>Marija E. Klyueva</b>                                                                                                                                                                                   | Abstract<br>539 |
| 3:40 pm | Nonlinear optical absorption in tetrapyrrolic macrocycles<br><b>Danilo Dini</b> , Mario Calvete, Sergej Vagin, Michael Hanack, G. Y. Yang, Ji Wei, Chen Weizhe and Kenneth J. McEwan                                                                       | Abstract<br>524 |
| 4:00 pm | Tetrapyrrolic macrocycles: from catalysis to molecular recognition<br><b>Bruno Andrioletti</b> , Florence Szydlo, Marketá Bernátková, Samia Zrig, Qi-Zhi Ren, Vladimir Král and Eric Rose                                                                  | Abstract<br>513 |

**Corroles and corrins**

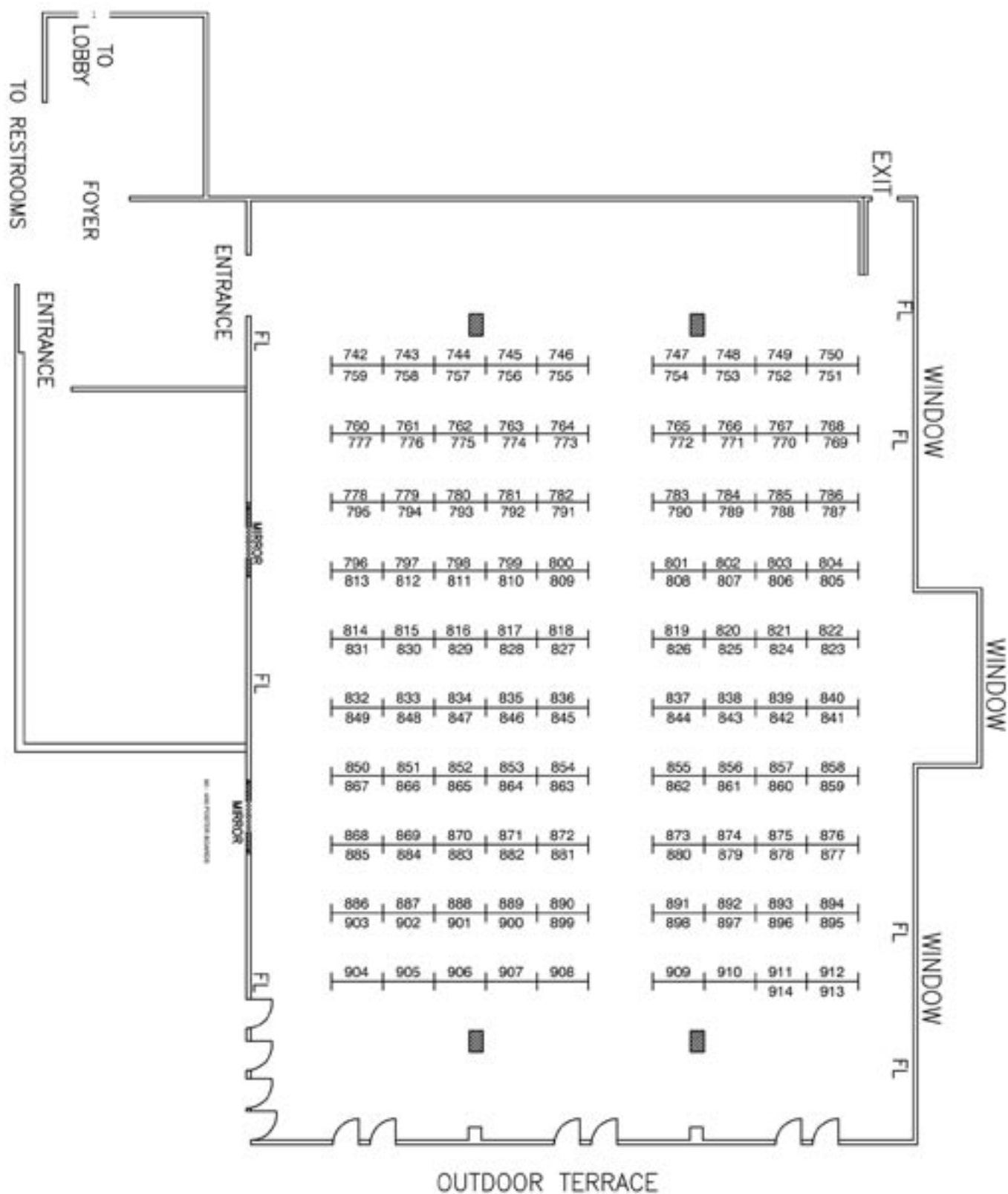
Chaired by Jean-Michel Barbe and Augusto Tomé

Grand Chenier

|         |                                                                                                                                                                                                                                          |                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Synthesis and physicochemical properties of heterobimetallic porphyrin-corrole derivatives<br><b>Jean-Michel Barbe</b> , Fabien Burdet, Claude P. Gros, Enrique Espinosa, Roger Guillard, Jianguo Shao, Zhongping Ou, and Karl M. Kadish | Abstract<br>514 |
| 2:20 pm | Enzymatic synthesis and structural characterization of novel pentamethylated corrinoids<br>Patricio J. Santander, <b>Yasuhiro Kajiwara</b> , Howard J. Williams and A. Lan Scott                                                         | Abstract<br>536 |
| 2:40 pm | Hemiporphycene and porphyrin from the expansion of the corrole ring<br><b>Sara Nardis</b> , Manuela Stefanelli, Federica Mandoj and Roberto Paolesse                                                                                     | Abstract<br>553 |
| 3:00 pm | Functionalization of corroles via cycloaddition reactions<br><b>Augusto C. Tomé</b> , Joana F. B. Barata, Ana M. G. Silva, Maria A. F. Faustino, Maria G. P. M. S. Neves, Artur M. S. Silva and José A. S. Cavaleiro                     | Abstract<br>571 |
| 3:20 pm | Electrochemical and spectroscopic studies of transition metal <i>meso</i> -triarylcorroles<br><b>Ingar H. Wasbotten</b> , Erik Steene, Karl M. Kadish and Abhik Ghosh                                                                    | Abstract<br>579 |



Thursday, July 15/Evening (6:00 - 8:00 pm)  
**Poster Presentation Map (presenting authors L-Z)**



# Thursday, July 15/Evening (6:00 - 8:00 pm)

## Poster Presentations (presenting authors L-Z)

### Armstrong Ballroom

- Highly stable NIR dyes for photonic applications: effects of light and oxygen on the synthesis of tetra(pentafluorophenyl)porphodilactone 742  
**Kimberly S. Lau**, Gamal E. Khalil, Martin P. Gouterman, Christal O. Lee, James B. Callis and Larry R. Dalton
- Synthesis and biological studies of 2,7,12,17-substituted porphycenes 743  
**Boyd A. Laurent**, M. Graça H. Vicente and Kevin M. Smith
- Novel polyphenylated naphthalocyanines: a new approach to enhance solubility and electronic properties 744  
**Chi-Hang Lee**, Thanasat Sooksimuang and Braja K. Mandal
- Self-assembled catalytic porphyrin architectures 745  
**Marga C. Lensen**, Johannes A. A. W. Elemans, Alan E. Rowan and Roeland J. M. Nolte
- Porphyrin-fullerene dyads for investigation of light induced electron transfer 746  
**S. Leupold** and Franz-Peter Montforts
- Synthesis and photophysics of porphyrin/fullerene-based rotaxanes 747  
**Ke Li**, David I. Schuster, Dirk M. Guldi, M. Ángeles Herranz and Luis Echegoyen
- NO and N<sub>x</sub>O<sub>y</sub> interactions with ferric porphyrins 748  
**Mark David Lim**, James C. Patterson, Ivan M. Lorkovic, Tigran S. Kurtikyan and Peter C. Ford
- Synthesis and photochemistry of nitrate bound chromium porphyrins: studies probing the reactivity of <sup>•</sup>NO<sub>2</sub> 749  
**Mark David Lim**, Robert J. Radford and Peter C. Ford
- Preparation, spectroscopic properties and electropolymerization of aniline-ethynyl metalloporphyrins 750  
**Ching-Yao Lin**, Yu-Chun Hung, Chih-Ming Liu, Chen-Fu Lo, Yu-Chin Lin and Chia-Liang Lin
- Photophysical properties of Ga-OH-TTP and Ga-OH-chlorin 751  
**C. Litwinski**, S. Tannert, A. Jesorka, M. Katterle and B. Röder
- Synthesis and in vitro studies of nonaggregated water-soluble phthalocyanines for photodynamic therapy 752  
**Wei Liu**, Tim Jensen, Frank R. Fronczek, Kevin M. Smith and M. Graça H. Vicente
- Synthesis of water-soluble porphyrins via Diels-Alder reactions of pyrroloporphyrins 753  
**Wei Liu**, Frank R. Fronczek, M. Graça H. Vicente and Kevin M. Smith
- Synthesis and in vitro photodynamic activities of new amphiphilic silicon(IV) phthalocyanines with cationic moieties 754  
**Pui-Chi Lo**, Jian-Dong Huang, Wing-Ping Fong, Wing-Hung Ko and Dennis K. P. Ng
- Influence of substituents on aluminium(III) phthalocyanine dissociation mechanism 755  
**Tatyana N. Sokolova**, Elena E. Suslova and **Tatyana N. Lomova**
- Thermodynamics and kinetics of axial coordination by metallotetraphenylporphyrins 756  
**Marina Yu. Tipugina**, **Tatyana N. Lomova**, Elena V. Motorina and Elena G. Mozzhukhina
- Synthesis of phthalocyanine derivatives bearing tetrathiafulvalene (TTF) units 757  
**Claudia Loosli**, Chung-Yang Jia, Marco Haas and Silvio Decurtins
- Synthesis and biological evaluation of novel carboranyl-corroles 758  
**Raymond Luguya**, Franck R. Fronczek, M. Graça H. Vicente and Kevin M. Smith

- Optical spectroscopy and electronic structure of 1,4,8,11,15,18,22,25-octa-fluoro-2,3,9,10,16,17,23,24-octa-perfluoroisopropyl zinc phthalocyanine 759  
**John Mack**, Steven P. Keizer, Barbara A. Bench, Sergiu M. Gorun and Martin J. Stillman
- Synthesis of new tetraazachlorins and tetraazabacterio-chlorins by 1,3-cycloaddition reactions of tetraa-zaporphines 760  
**Elena A. Makarova** and Evgeny A. Lukyanets
- Switchable metalloporphyrins for information processing or storage 761  
 Géraldine Maheut, Stéphanie Gazeau, Jacques Pécaut and **Jean-Claude Marchon**
- Phenantroline- and benzo-15-crown-5-appended porphyrazines: synthesis and investigation 762  
**Alexander G. Martynov**, Yulia G. Gorbunova and Aslan Yu. Tsivadze
- Ligand binding properties of reconstituted myoglobin with iron porphycene 763  
**Takashi Matsuo**, Takashi Hayashi and Yoshio Hisaeda
- An anionic porphyrin in cationic cyclodextrin vesicles: novel nanoaggregates delivered in cells for PDT 764  
**Antonino Mazzaglia**, Nicola Angelini, Domenico Lombardo, Norberto Micali, Salvatore Patanè, Maria Teresa Sciortino, Valentina Villari and Luigi Monsù Scolaro
- Excited triplet state behavior and singlet oxygen photogeneration of anionic porphyrins entangled in cationic amphiphilic cyclodextrins 765  
**Antonino Mazzaglia**, Luigi Monsù Scolaro and Salvatore Sortino
- Imidazoporphyrins: functionalisation of the  $\beta,\beta'$ -pyrrolic porphyrin face 766  
 Maxwell J. Crossley and **James A. McDonald**
- Synthesis and characterization of novel Zn-phthalocyanine DBU complexes 767  
 Roberta Del Sole, Agnese De Luca, **Giuseppe Mele** and Giuseppe Vasapollo
- Synthesis of novel porphyrins containing cardanol, a renewable resource obtained from “cashew nut shell liquid” 768  
 Roberta Del Sole, **Giuseppe Mele**, Giuseppe Vasapollo, Orazio A. Attanasi, Paolino Filippone and Selma E. Mazzetto
- Study of hexapyrin (1.0.1.0.0.0) as a colorimetric sensor for use in radioactive waste remediation 769  
 Jonathan L. Sessler, **Patricia J. Melfi**, Daniel Seidel, Anne E.V.Gorden, Phillip Palmer, Pamela Gordon, D. Webster Keogh and C. Drew Tait
- Electrodeposition of ZnO-films in the presence of porphyrins and phthalocyanines 770  
**Esther Michaelis**, Dieter Wöhrle, Kazuteru Nonomura and Derck Schlettwein
- Synthetic studies directed to an enantiomerically pure model compound for tolyporphin A 771  
 Genevieve Etornam Adukpo and **Franz-Peter Montforts**
- Structures and properties of N-fused pentaphyrins 772  
**Shigeki Mori**, Ji-Young Shin, Fumiaki Ishikawa, Hiroyuki Furuta and Atsuhiko Osuka
- Syntheses and metal complexation of meso-unsubstituted N-confused porphyrins 773  
 Hiroyuki Furuta, **Tatsuki Morimoto** and Atsuhiko Osuka
- Functionalization of light-driven chiral molecular scissors 774  
**Takahiro Muraoka**, Kazushi Kinbara, Yuka Kobayashi and Takuzo Aida
- Enhancement of peroxidase activity in myoglobin by iron porphycene as a prosthetic group 775  
**Dai Murata**, Hideaki Sato, Takashi Hayashi and Yoshio Hisaeda

|                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Two-photon excitation of sensitisers for photodynamic therapy<br><b>Karen A. Murphy</b> and <i>David Phillips</i>                                                                                                                                                                                                                                                                                                           | 776 |
| Synthesis and characterization of linear polymeric phthalocyanines<br><b>Emel Musluoglu</b> , <i>Safiye Sariisik</i> and <i>Vefa Ahsen</i>                                                                                                                                                                                                                                                                                  | 777 |
| Synthesis of metallo-isoporphyrins through b-bilenes<br><b>Celinah Mwakwari</b> and <i>Kevin M. Smith</i>                                                                                                                                                                                                                                                                                                                   | 778 |
| Three-dimensional structure of the cytochrome P450cam mutant that mimics putidaredoxin-bound form<br><b>Shingo Nagano</b> , <i>Takehiko Tosha</i> , <i>Koichiro Ishimori</i> , <i>Isao Morishima</i> and <i>Thomas L. Poulos</i>                                                                                                                                                                                            | 779 |
| Immobilization of anionic iron(III) porphyrins on LDH by exfoliation process. Characterization and catalytic activity<br><b>Shirley Nakagaki</b> , <i>Fernando Wypych</i> , <i>Matilte Halma</i> and <i>Sueli Maria Drechsel</i>                                                                                                                                                                                            | 780 |
| Synthesis and photophysical properties of directly linked cyclic porphyrin arrays<br><b>Yasuyuki Nakamura</b> , <i>Naoki Aratani</i> , <i>Dongho Kim</i> and <i>Atsuhiko Osuka</i>                                                                                                                                                                                                                                          | 781 |
| Synthesis of novel chlorin-porphyrin dyads via 1,3-dipolar cycloadditions<br><i>Ana M. G. Silva</i> , <i>Augusto C. Tomé</i> , <b>Maria G. P. M. S. Neves</b> , <i>Artur M. S. Silva</i> and <i>José A. S. Cavaleiro</i>                                                                                                                                                                                                    | 782 |
| Spectroscopic and conformational analysis of meso-phenyl biliverdin isomers<br><b>Fernando Niemevz</b> , <i>José M. Delfino</i> and <i>Graciela Y. Buldain</i>                                                                                                                                                                                                                                                              | 783 |
| Photochemical and photophysical properties of new metallophthalocyanine photosensitizers<br><i>I. Seotsanyana-Mokhosi</i> , <i>A.O. Ogunsipe</i> and <b>Tebello Nyokong</b>                                                                                                                                                                                                                                                 | 784 |
| Molecular structure and physicochemical properties of diazaporphyrin iron(III) complexes<br><b>Yoshiki Ohgo</b> , <i>Saburo Neya</i> , <i>Masashi Takahashi</i> , <i>Masuo Takeda</i> and <i>Mikio Nakamura</i>                                                                                                                                                                                                             | 785 |
| Negative activation enthalpy in cobalt(IV)-carbon bond cleavage of organocobaloxime via formation of a charge-transfer complex<br><b>Kei Ohkubo</b> and <i>Shunichi Fukuzumi</i>                                                                                                                                                                                                                                            | 786 |
| Long-lived charge-shift state in a zinc porphyrin linked with gold(III) porphyrin cation in nonpolar solvents<br><b>Kei Ohkubo</b> , <i>Paul J. Sentic</i> , <i>Maxwell J. Crossley</i> , <i>Wenbo E</i> , <i>Zhongping Ou</i> , <i>Jianguo Shao</i> , <i>Karl M. Kadish</i> , <i>James A. Hutchison</i> , <i>Kenneth P. Ghiggino</i> , <i>Nikolai V. Tkachenko</i> , <i>Helge Lemmetyinen</i> and <i>Shunichi Fukuzumi</i> | 787 |
| Homogeneous dioxygen reduction to water by one- and two-electron reductants catalyzed by cofacial dicobalt porphyrins<br><b>Ken Okamoto</b> , <i>Claude P. Gros</i> , <i>Roger Guillard</i> and <i>Shunichi Fukuzumi</i>                                                                                                                                                                                                    | 788 |
| Synthesis and chemistry of novel benzoylbiliverdins from chemical oxidation of dodeca-substituted porphyrins<br><b>Owendi Ongayi</b> and <i>M. Graça H. Vicente</i>                                                                                                                                                                                                                                                         | 789 |
| Synthesis of phenylene-linked porphyrin oligomers<br><i>Ken-ichi Sugiura</i> , <b>Tomomi Oyama</b> , <i>Hitoshi Miyasaka</i> and <i>Masahiro Yamashita</i>                                                                                                                                                                                                                                                                  | 790 |
| A novel butoxy-substituted lithium naphthalocyanine (LiNc-BuO): a new class of crystalline paramagnetic spin probes for EPR oximetry<br><b>Ramasamy P. Pandian</b> and <i>Periannan Kuppusamy</i>                                                                                                                                                                                                                           | 791 |
| EPR studies of CuTPP and CuOBP oriented in the liquid crystal ZLI-1132<br><i>M. Velayutham</i> , <b>R. P. Pandian</b> , <i>T. A. Janaki</i> and <i>S. Subramanian</i>                                                                                                                                                                                                                                                       | 792 |

|                                                                                                                                                                                                                                                                                   |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Synthesis and study of a new class of “hybrid porphyrins”: diamidopyridine-polypyrrolic macrocycles<br><b>Gheorghe Dan Pantos, Jonathan L. Sessler, Evgeny Katayev and Yu. A. Ustynyuk</b>                                                                                        | 793 |
| Characterization of meso-substituted porphyrins bearing 2,3-dicyanopyrazines<br><b>Jong-Ho Park, Jae Yun Jaung and Dong-Soo Park</b>                                                                                                                                              | 794 |
| Synthesis and spectral properties of dendrimeric phthalocyanine<br><b>Jong-Ho Park, Jae Yun Jaung and Dong-Soo Park</b>                                                                                                                                                           | 795 |
| Rational versus statistical synthesis of amphiphilic porphyrins and their use in small unilamellar vesicle studies<br><b>Carina Peritore, Diana Tracy and Uschi Simonis</b>                                                                                                       | 796 |
| On the distance dependence of energy and electron transfer<br><b>Karin Pettersson, Thomas Ljungdahl, Jerker Mårtensson and Bo Albinsson</b>                                                                                                                                       | 797 |
| Evidence of two long range electron transfer pathways in the catalytic mechanism of versatile peroxidase from <i>Bjerkandera adusta</i><br><b>Rebecca Pogni, Maria C. Baratto, Stefania Giansanti, Rafael Vazquez-Duhalt and Riccardo Basosi</b>                                  | 798 |
| Redox behavior of substituted lutetium bisphthalocyanines in organic film modified electrodes<br><b>Annig Pondaven, Achille Nassi, Evangeline Njanja-Tcheunkeu, Emmanuel Ngameni, Cyril Cadiou and Maurice L'Her</b>                                                              | 799 |
| Synthesis and photophysical properties of thienyl porphyrins<br><b>M. T. Pryce, T. E. Keyes, J. Rochford and A. D. Rooney</b>                                                                                                                                                     | 800 |
| Synthesis and characterization of symmetrical alkylsubstituted single-, double- and triple-decker europium(III) phthalocyanines<br><b>Victor E. Pushkarev, Maria O. Breusova, Igor V. Zhukov, Eugeny V. Shulishov and Yuriy V. Tomilov</b>                                        | 801 |
| Aromatic core modified hexaphyrins: synthesis and characterization<br><b>Harapriya Rath, Jeyaraman Sankar and Tavarékere K. Chandrashekar</b>                                                                                                                                     | 802 |
| Adjustable cavity for host / guest recognition in cofacial bisporphyrinic tweezers<br><b>Régis Rein, Maurice Gross and Nathalie Solladié</b>                                                                                                                                      | 803 |
| Activation parameters, catalytic activity and spectroscopic detection of new pinch-porphyrin $\pi$ -cation radical ferryl, catalytic intermediate model of peroxidases<br><b>Yasmi Reyes-Ortega, José Luis Alcántara-Flores, Daniel Ramírez-Rosales and Rafael Zamorano-Ulloa</b> | 804 |
| Effects of coordinated metal and peripheral substituents on the photophysical properties of Ni, Pd, and Pt porphyrazines<br><b>Giampaolo Ricciardi, Jonas M. Hostletter, Michael A. J. Rodgers and Angela Rosa</b>                                                                | 805 |
| Synthesis, coordination chemistry, reactivity, and Langmuir-Shäfer films of (2-chloro-ethoxy)Fe(III)ethyl-(thioporphyrazine)<br><b>Giampaolo Ricciardi, Gaetano Garramone, Serena Casilli and Ludovico Valli</b>                                                                  | 806 |
| Photophysics of ferrocenyl / ferrocenium porphyrins<br><b>J. Rochford, G. O'Keeffe, M. T. Pryce and A. D. Rooney</b>                                                                                                                                                              | 807 |
| Design and synthesis of azaporphyrin analogues<br>Anke K. Eckert, Sagrario Esperanza, Mikhail K. Islyaikin, Gheorghe Dan Pantos,<br><b>M. Salomé Rodríguez-Morgade, Jonathan L. Sessler and Tomás Torres</b>                                                                      | 808 |

|                                                                                                                                                                                                                                                        |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Transient near infrared absorption in a series of porphyrin dimers<br><b>Joy E. Rogers</b> , Jonathan E. Slagle, Daniel G. McLean, Paul A. Fleitz, Huriye Akdas, Harry L. Anderson and Kenneth J. McEwan                                               | 809 |
| Tuning porphyrin / DNA supramolecular assemblies by competitive binding<br><b>Andrea Romeo</b> , Luigi Monsù Scolaro and Robert F. Pasternack                                                                                                          | 810 |
| Porphyrin deposition induced by UV irradiation<br><b>Andrea Romeo</b> , Luigi Monsù Scolaro, Maria Angela Castriciano, Giovanna De Luca, Salvatore Patanè and Norberto Micali                                                                          | 811 |
| Cationic Mn porphyrin zeolite-encaged as a very efficient mimic of cytochrome P-450<br><b>Ieda L. V. Rosa</b> , Fabiana C. Skrobot, Gianluca C. Azzellini and Rodrigo M. Liegel                                                                        | 812 |
| Bipyrrole and biimidazole containing macrocycles: a new class of expanded porphyrins<br><b>Bobbi Rubin</b> , Thomas Köhler, Vladimir Rozniatrovski and Jonathan L. Sessler                                                                             | 813 |
| Functionalization of the porphyrin periphery: synthesis of enamino-, quinolino-, biquinolino-porphyrins and enamino dimers<br>Sébastien Richeter, Christophe Jeandon, Angel Jimenez, Jean-Paul Gisselbrecht, <b>Romain Ruppert</b> and Henry J. Callot | 814 |
| Synthesis of metal ion linked porphyrin oligomers<br>Sébastien Richeter, Christophe Jeandon, Jean-Paul Gisselbrecht, <b>Romain Ruppert</b> and Henry J. Callot                                                                                         | 815 |
| Infrared spectroelectrochemistry of iron porphyrins and porphinones<br><b>Michael D. Ryan</b> , Zhongcheng Wei and Hongqiang Zhang                                                                                                                     | 816 |
| Use of poly-dithianyl porphyrins as precursors for the synthesis of formyl porphyrins<br><b>Claudia Ryppa</b> , Sabine Hatscher, Natalia Sergeeva and Mathias O. Senge                                                                                 | 817 |
| A synthetic approach directed to tolyporphyrin K<br><b>R.I. Sáez Díaz</b> and Franz-Peter Montforts                                                                                                                                                    | 818 |
| Cationic amphiphilic phthalocyanine derivatives for photodynamic therapy of cancer<br><b>Keiichi Sakamoto</b> , Eiko Ohno-Okumura, Taku Kato, Masaki Watanabe and Michael J. Cook                                                                      | 819 |
| New routes to chiral metallocorroles<br><b>Irena Saltsman</b> , Yael S. Balazs, Israel Goldberg and Zeev Gross                                                                                                                                         | 820 |
| Amphiphilic 2,7,12,17-tetraaryl substituted 3,6,13,16-tetraazaporphycenes<br>Santiago Nonell, José I. Borrell, Salvador Borrós, Carles Colominas, Oscar Rey, Noemí Rubio, <b>David Sánchez-García</b> and Jordi Teixidó                                | 821 |
| Synthesis of core modified corroles using [3+1] acid catalyzed simultaneous condensation and coupling reactions<br><b>Jeyaraman Sankar</b> , Harapriya Rath and Tavarékere K. Chandrashekar                                                            | 822 |
| High peroxidase activity of sperm whale myoglobin by hybridization of modified-heme reconstitution and distal histidine mutation<br><b>Hideaki Sato</b> , Takashi Hayashi and Yoshio Hiseada                                                           | 823 |
| Design and properties of cyclic dimers of fused porphyrins as novel host molecules for fullerenes<br><b>Hiroshi Sato</b> , Kentaro Tashiro, Takuzo Aida, Kazuhiko Saigo, Hideyuki Shinmori, Atsuhiko Osuka and Koichi Komatsu                          | 824 |

|                                                                                                                                                                                                                                                                             |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Identification and characterization of dynamic intraprotein “signals” in heme oxygen sensing and signaling proteins using recombinant variants of BjFixL and EcDos<br><i>Jaroslava Mikšová, Christine M. Suquet, Mark S. Nissen, Randy W. Larsen and James D. Satterlee</i> | 825 |
| The X-ray crystal structures of oxy- and deoxy-EcDos heme domains indicate that signal initiation-propagation is conveyed by secondary structure conformational changes<br><i>HaJeung Park, Christine M. Suquet, Mark S. Nissen, ChulHee Kang and James D. Satterlee</i>    | 826 |
| Me-porphyrins application, for nano-gravimetric sensors development, in coffee quality control<br><i>A. Scarpa, D. Del Turco and L. Fachechi.</i>                                                                                                                           | 827 |
| Me-porphyrins application, for nano-gravimetric sensors development, for air quality detection in an environment with crude oil distillation derivatives<br><i>A. Scarpa, D. Del Turco and L. Fachechi</i>                                                                  | 828 |
| Spectroscopic and competitive binding studies of cationic porphyrins with DNA<br><i>Amy M. Shachter, Irina Vodkin, Kimberly Rodger, Amy Yap, Erika Soriano, Aaron Cullen, Vivek Sasikumar, Amelia Kasper, Jeremy Armstrong and Lovorka Degoricija</i>                       | 829 |
| The acidity and basicity of free-base corroles in non-aqueous media<br><i>Jing Shen, Jianguo Shao, Zhongping Ou, Karl M. Kadish and Daniel T. Gryko</i>                                                                                                                     | 830 |
| Self-aggregation of synthetic zinc bacteriochlorophyll-d possessing an oligo(difluoromethylene) group<br><i>Reiko Shibata, Takashi Nishiyama and Hitoshi Tamiaki</i>                                                                                                        | 831 |
| Structures and properties of meso-alkyl substituted expanded porphyrins<br><i>Soji Shimizu, Naoki Aratani and Atsuhiko Osuka</i>                                                                                                                                            | 832 |
| Structures and properties of hexaphyrin bis-copper complexes<br><i>Soji Shimizu, V. G. Anand, Ko Furukawa, Tatsuhisa Kato and Atsuhiko Osuka</i>                                                                                                                            | 833 |
| Synthesis and properties of core-modified tetrabenzoporphyrin derivatives<br><i>Yusuke Shimizu, Hidemitsu Uno and Noboru Ono</i>                                                                                                                                            | 834 |
| Selective extraction of higher fullerenes using cyclic dimers of zinc porphyrins<br><i>Yoshiaki Shoji, Kentaro Tashiro and Takuzo Aida</i>                                                                                                                                  | 835 |
| Synthesis and characterization of porphyrin bioconjugates<br><i>Martha Sibrian-Vazquez, Robert P. Hammer and M. Graça H. Vicente</i>                                                                                                                                        | 836 |
| Nuclear resonance vibrational spectroscopy: a novel technique to study heme iron vibrational modes and the effect of binding small molecules<br><i>Nathan Silvernail and W. Robert Scheidt</i>                                                                              | 837 |
| Photoinduced energy transfer followed by electron transfer in a supramolecular triad composed of boron dipyrin, zinc porphyrin, and fullerene<br><i>Phillip M. Smith, Melvin E. Zandler, Amy L. McCarty, Mitsunari Itou, Yasuyuki Araki, Osamu Ito and Francis D'Souza</i>  | 838 |
| Controlled synthesis of lace-like platinum nanostructures using a porphyrin photocatalyst<br><i>Yujang Song, Yan Qiu, Anup K. Singh and John A. Shelnutt</i>                                                                                                                | 839 |
| <sup>1</sup> H NMR study of an iron(III) tris(dipyrrin) complex<br><i>Erik Steene, Abhik Ghosh and Seth Cohen</i>                                                                                                                                                           | 840 |
| Singlet-singlet and triplet-triplet energy transfer in cofacial bisporphyrins<br><i>Sébastien Faure, Christine Stern, Roger Guillard and Pierre D. Harvey</i>                                                                                                               | 841 |

|                                                                                                                                                                                                                                                                                                      |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Characterization of heme scavenging pathogen cell wall proteins by absorption, MCD and ESI-MS techniques<br><i>Martin J. Stillman, John Mack, Christie Vermeiren and David E. Heinrichs</i>                                                                                                          | 842 |
| Functional aqueous porphyrin arrays<br><i>Danial Stocks, Pall Thordarson and Maxwell J. Crossley</i>                                                                                                                                                                                                 | 843 |
| X-Ray absorption and Mössbauer studies of high-valent species in chloroperoxidase<br><i>Kari Lunder Stone, Carsten Krebs and Michael T. Green</i>                                                                                                                                                    | 844 |
| Synthesis of core-modified porphyrins and their dendritic encapsulation<br><i>Silvio Stute, Dietmar Appelhans, Kerstin Gloe and Karsten Gloe</i>                                                                                                                                                     | 845 |
| Theoretical and experimental study of acid-base and coordination properties of porphyrazines with annulated 1,2,5-thiadiazole rings<br><i>Anna A. Gaberkorn, Yuliya B. Ivanova, Ol'ga V. Molodkina, Maria Pia Donzello, Igor' Pimkov, Claudio Ercolani, Vladimir B. Sheinin and Pavel A. Stuzhin</i> | 846 |
| Theoretical AM1 study of the protonated forms of meso-azaporphyrins and porphyrazines<br><i>Pavel A. Stuzhin and Ol'ga V. Stuzhina</i>                                                                                                                                                               | 847 |
| Octahaloporphyrins (1) - Synthesis and characterization of octabromo and octaiodoporphyrins<br><i>Weijie Su, Kristi Gossett and Paul A. Fleitz</i>                                                                                                                                                   | 848 |
| Octahaloporphyrins (2) - Synthesis of meso-substituted octahaloporphyrins using 3,4-dihalopyrroles<br><i>Weijie Su, Kristi Gossett and Paul A. Fleitz</i>                                                                                                                                            | 849 |
| Improved synthesis and reactivities of meso-aryl substituted [26]hexaphyrin<br><i>Masaaki Suzuki and Atsuhiko Osuka</i>                                                                                                                                                                              | 850 |
| Crystal growth and structural analyses of tetrakis(thiadiazole)porphyrazines<br><i>Yosuke Suzuki, Masato Fujimori, Hirofumi Yoshikawa and Kunio Awaga</i>                                                                                                                                            | 851 |
| The challenge of being straight. 3. Diamagnetism and dramatically cisoid-tilted axial ligands in dialkyl-ruthenium(IV) porphyrins<br><i>Anders Svadberg, Terkel Hansen, Kristian Svendsen, Helge Ovesen, Espen Tangen, Jannie Swarts and Abhik Ghosh</i>                                             | 852 |
| Electrochemical, electronic absorption, and resonance Raman studies of manganese(III) and chromium(V)-oxo-corroles<br><i>Inge Johansen, Kristian Svendsen, Helge Ovesen, Terkel Hansen, Erik Steene, Ingar H. Wasbotten and Abhik Ghosh</i>                                                          | 853 |
| Interaction of meso-tetraphenylporphyrin with phospholipid monolayers<br><i>A. A. Hidalgo, Marcel Tabak and O.N. Oliveira Jr</i>                                                                                                                                                                     | 854 |
| Properties and reactions of $\mu$ -(dihydroxo)dipalladium(II) bisporphyrin complexes<br><i>Yuko Takao, Tokuji Takeda, Sachiko Tanikawa and Jun-ichiro Setsune</i>                                                                                                                                    | 855 |
| Hydrogen evolution and biofuel cell by photo-function of chlorophyll-a derivatives<br><i>Yumi Takeuchi and Yutaka Amao</i>                                                                                                                                                                           | 856 |
| Synthesis of expanded porphyrins with functional groups<br><i>Aya Tanabe and Jun-ichiro Setsune</i>                                                                                                                                                                                                  | 857 |
| Intramolecular energy transfer in meso-acrydinylporphyrins<br><i>Yasutaka Tanaka, Yoshinori Yamashita, Satoshi Matsueda and Hiroshi Suzuki</i>                                                                                                                                                       | 858 |



- The challenge of being straight and of explaining the unknowable in terms of the unobservable. 2. 859  
 Understanding the unexpected linearity of an {FeNO}<sup>7</sup> unit and the issue of metal oxidation state therein  
**Espen Tangen** and **Abhik Ghosh**
- Energy migration on pheophorbide a loaded DAB dendrimers 860  
**S. Tannert**, **Steffen Hackbarth**, **Evgeni Ermilov** and **B. Röder**
- Non-invasive spectroscopic monitoring of tissue oxygenation 861  
**Kevin Ward**, **R. Wayne Barbee**, **James Turner**, **Ivo Torres-Filho**, **Hakam Tiba**, **Luciana Torres**, **Rao Ivatury**,  
**Roland Pittman** and **Bruce Spiess**
- Synthesis of porphyrazines as a new building block for nanoscale photonic materials 862  
**Ngee Ai Thai**, **Kai Fan Cheng** and **Charles Michael Drain**
- Supramolecular linking of proteins and enzymes to porphyrins 863  
**Pall Thordarson**, **Roeland J. M. Nolte**, **Alan E. Rowan** and **Kelly Velonia**
- Synthesis of expanded rosarins using bipyrrrole derivatives 865  
**Masayuki Toda**, **Takafumi Yoshida** and **Jun-ichiro Setsune**
- Preparation of novel unsymmetrically-substituted zinc phthalocyanines 866  
**Alexander Yu. Tolbin**, **Alexey V. Ivanov**, **Larisa G. Tomilova** and **Nikolai S. Zefirov**
- Coordination chemistry of expanded porphyrins: the synthesis of multinuclear metal complexes 867  
**Jonathan L. Sessler**, **Elisa Tomat**, **Jacqueline M. Veauthier** and **Tarak Mody**
- Synthesis of porphyrin-[60]fullerene triads 868  
**Ana M. G. Silva**, **Augusto C. Tomé**, **Maria G. P. M. S. Neves**, **Artur M. S. Silva** and **José A. S. Cavaleiro**
- Synthesis and characterization of new porphyrin-phthalocyanine dyads 869  
**João P. C. Tomé**, **Ana M. V. M. Pereira**, **Cristina M. A. Alonso**, **Maria G. P. M. S. Neves**, **Augusto C. Tomé**,  
**Artur M. S. Silva**, **José A. S. Cavaleiro**, **Maria Victoria Martínez-Díaz** and **Tomás Torres**
- New development in the anti-bacterial activity of poly-S-lysine-porphyrin conjugates 870  
**João P. C. Tomé**, **Maria G. P. M. S. Neves**, **Augusto C. Tomé**, **José A. S. Cavaleiro**, **Michela Magaraggia**,  
**Stefania Ferro**, **Marina Soncin** and **Giulio Jori**
- Synthesis of diporphyrin fused with anthracene 871  
**Hidemitsu Uno**, **Kazuyuki Tominaga** and **Noboru Ono**
- New porphyrin oligomers for molecular recognition 872  
**Lok H Tong**, **Sofia Pascu** and **Jeremy K. M. Sanders**
- Phthalocyanines: ideal partners for photo- and electroactive ensembles 873  
**Tomás Torres**, **Purificación Vázquez**, **Maria Victoria Martínez-Díaz**, **Gema De La Torre**, **Andreas**  
**Gouloumis**, **Giovanni Bottari**, **Andrés De La Escosura**, **J. José Cid**, **Maurizio Quintiliani**,  
**Beatriz Ballesteros**, **J. Luis Baeza** and **Paloma Roales**
- Synthesis and characterization of new phthalocyanines containing carboran groups 874  
**Olga Tsaryova**, **A. Semioshkin**, **Dieter Wöhrle** and **V. I. Bregadze**
- Molecular arrays containing Ru(TPP) and metal-metal dimers of the type M<sub>2</sub>L<sub>4</sub> where M = Ru or Rh 875  
**Swarna Ulaganathan** and **Karl M. Kadish**
- A straightforward route to porphyrazines with new functionalities 876  
**Rabia Zeynep Uslu** and **Ahmet Gül**

- Conjugated porphyrin-fullerene hybrids 877  
**Sean A. Vail**, João P. C. Tomé, Paul J. Krawczuk, Dirk M. Guldi, Luis Echegoyen, José A. S. Cavaleiro and David I. Schuster
- Porphyrins as antiviral agents 878  
 Inês Pegado, Ricardo R. Duarte, **Maria L. Valdeira**, Filomena Caeiro, Eduarda M. P. Silva, Francesca Giuntini, Maria A. F. Faustino, João P. C. Tomé, Maria G. P. M. S. Neves, Augusto C. Tomé and José A. S. Cavaleiro
- Antiviral activity of porphyrins against human cytomegalovirus 879  
 S. Almeida, P. Paixão, **Maria L. Valdeira**, Maria A. F. Faustino, João P. C. Tomé, Maria G. P. M. S. Neves, Augusto C. Tomé and José A. S. Cavaleiro
- Properties of air-water interface and thin solid films of a zinc ethanediyl-bridged porphyrin dimer 880  
 Victor V. Borovkov, Sabrina Conoci, Yoshihisa Inoue, Bruno Pignataro, Giovanni Marletta, Salvatore Sortino, Serena Casilli and **Ludovico Valli**
- Supramolecular structure of Langmuir-Blodgett films of copper porphyrazine 881  
**Ludovico Valli**, Serena Casilli, L. Valkova, N. Borovkov and Oskar I. Koifman
- Electrochemistry of  $[(\text{TmpyP})\text{M}]^{\text{n}+}(\text{X})_{\text{n}}$  ( $\text{X} = \text{Cl}^-$ ,  $\text{I}^-$ , or  $\text{BPh}_4^-$  and  $\text{n} = 4$  or  $5$ ) where M is one of fifteen different metal ions 882  
**Eric Van Caemelbecke**, A. Derbin, Rachel Garcia, Peter Hambright and Karl M. Kadish
- Preparation of peri-condensed quinolino porphyrins toward a photodynamic therapy based on novel porphyrins 883  
**H. N. S. Van Der Haas**, R. L. P. De Jong, M. Noushazar, Cornelis Erkelens, G. M. T. Smijs, Yangzhong Liu, P. Gast, J. J. Schuitmaker and J. Lugtenburg
- Basicity of porphyrin macrocycle: role of structural and electronic factors 884  
**Sergei A. Vinogradov**, Olga S. Finikova, Partick J. Carroll and Andrei V. Cheprakov
- A supramolecular cup and ball  $\text{C}_{60}$ -porphyrin conjugate system 885  
**Mathieu E. Walther**, Cyril Bourgogne, Teresa Figueira Duarte, Maurice Gross, Jean-François Nierengarten and Nathalie Solladié
- Growth of gold nanodendrites by porphyrin photocatalysis 886  
**Zhongchun Wang**, Yan Qiu and John A. Shelnutt
- Photophysics of gallium(III) and tin(IV) corroles 887  
**Jeremy J. Weaver**
- Modular synthesis of capped porphyrins as receptors for molecular recognition studies and intramolecular charge separation 888  
**James E. A. Webb** and Pall Thordarson
- Synthesis and study of new texaphyrin derivatives 889  
**Wen-hao Wei**, Mark Fountain, Darren J. Magda, Zhong Wang and Jonathan L. Sessler
- Chlorin allylic oxidation by silica - Access to porphyrin  $\alpha$ -diones 890  
**Matthew N. Wicks** and Paul Burn
- Regiospecific halogenation of a porphyrin - A new route to porphyrin  $\alpha$ -diones 891  
**Matthew N. Wicks** and Paul Burn
- Butadiyne linked porphyrin wires 892  
**Craig J. Wilson**, Michael J. Frampton, Holly E. Blades and Harry L. Anderson

|                                                                                                                                                                                                                                                                                                                                                             |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Shedding new light on bacteriochlorophyll distributions<br><i>Michael A. Wilson, Mian Huang and Brendan J. Keely</i>                                                                                                                                                                                                                                        | 893 |
| Competition between super-exchange mediated and sequential electron transfer in a bridged donor-acceptor system<br><i>Mikael Winters, Karin Pettersson, Jerker Mårtensson and Bo Albinsson</i>                                                                                                                                                              | 894 |
| Synthesis and characterization tetra- $\alpha$ -(p-amino)benzyloxy substituted metallophthalocyanine and its precursor<br><i>Jin-ping Xue, Ting-xiu Ye, Hu-ming Hong and Nai-sheng Chen</i>                                                                                                                                                                 | 895 |
| Rapid dismutation of $H_2O_2$ by cofacial bis-corrole catalase models<br><i>Fei Yam, Nga-Chun Ng, Hai-Yang Liu, Lam-Lung Yeung and C. K. Chang</i>                                                                                                                                                                                                          | 896 |
| Synthesis and properties of new type of bilin derivatives<br><i>Takae Yamauchi, Hirotaka Furukawa, Kenji Wada, Tadashi Mizutani and Susumu Kitagawa</i>                                                                                                                                                                                                     | 897 |
| Investigative studies of porphyrin analogues for targeted inhibition of the HA2 domain of Porphyromonas gingivalis<br><i>Benjamin C. M. Yap, Maxwell J. Crossley, James A. McDonald, Melissa J. Quinn, Mayuri Paramaesvaran, Neil Hunter and Charles A. Collyer</i>                                                                                         | 898 |
| Synthesis and properties of novel 4-{4-[(Z or E)-phenyldiazenyl]-1-naphthyl}oxy-substituted phthalocyanines<br><i>H. Yasemin Yenilmez, Ali Ihsan Okur and Ahmet Gül</i>                                                                                                                                                                                     | 899 |
| Excitation energy migration processes within three-dimensional zinc(II) porphyrin boxes probed by exciton annihilation and transient absorption anisotropy<br><i>Zin Seok Yoon, In-Wook Hwang, Tae Kyu Ahn, Dah Mee Ko, Takashi Nakamura, Atsuhiko Osuka and Dongho Kim</i>                                                                                 | 900 |
| Conformational heterogeneity and excitation energy transfer efficiency in meso-meso directly linked zinc(II) porphyrin arrays<br><i>Zin Seok Yoon, Tae Kyu Ahn, Naoki Aratani, Atsuhiko Osuka and Dongho Kim</i>                                                                                                                                            | 901 |
| Synthesis of bis-silver octaphyrin complex<br><i>Katsuyuki Youfu, Yasuo Tanaka and Atsuhiko Osuka</i>                                                                                                                                                                                                                                                       | 902 |
| Synthesis and spectroscopic properties of octa-tosylamido Ni(II) phthalocyanine<br><i>Fatma Yüksel and Vefa Ahsen</i>                                                                                                                                                                                                                                       | 903 |
| Effect of ligand substituents on the electrocatalytic activity of metallophthalocyanines for the oxidation of hydrazine<br><i>Daniela Geraldo, Cristian Linares, Maritza Páez and José H. Zagal</i>                                                                                                                                                         | 904 |
| Cimex lectularius nitrophorin characterized by resonance Raman spectroscopy<br><i>Adelajda A. Zareba, Estelle M. Maes, Andrzej Weichsel, William R. Montfort, and Roman S. Czernuszewicz</i>                                                                                                                                                                | 905 |
| Resonance Raman spectroscopic study of nitrophorin 2 from Rhodnius prolixus kissing bug and its mutants<br><i>Adelajda A. Zareba, Estelle M. Maes, William R. Montfort, F. Ann Walker and Roman S. Czernuszewicz</i>                                                                                                                                        | 906 |
| Dynamics and pathways of photoinduced electron transfer via $S_1$ - and $T_1$ -states in nitrophenyl octaethyl-porphyrins (free-bases and Pd-complexes)<br><i>Evgeny I. Sagun, Eduard I. Zenkevich, Valery N. Knyukshto, Sergei A. Tikhomirov and Alexander M. Shulga</i>                                                                                   | 907 |
| Conformational dynamics and unusual non-radiative deactivation of meso-aryloctaalkylporphyrins in the excited triplet state (free-bases and metallocomplexes)<br><i>Evgeny I. Sagun, Eduard I. Zenkevich, Valery N. Knyukshto, Alexander M. Shulga, Igor V. Avilov, Igor V. Filatov, Lyudmila A. Grubina, Oleg A. Golubchikov and Alexander S. Semeykin</i> | 908 |

|                                                                                                                                                                                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Electrochemical and spectroelectrochemical investigations of metallocorrolazines<br><b>Riqiang Zhan</b> , Jianguo Shao, Zhongping Ou, Beaven S. Mandimutsira, Bobby Ramdhanie, David P. Goldberg and Karl M. Kadish                                              | 909 |
| A colorimetric sensor array for aqueous analysis<br><b>Chen Zhang</b> and Kenneth S. Suslick                                                                                                                                                                     | 910 |
| Laser flash photolysis generation and kinetic studies of high-valent porphyrin metal-oxo intermediates<br><b>Rui Zhang</b> , John H. Horner and Martin Newcomb                                                                                                   | 911 |
| Electrochemistry of substituted porphyrin zinc-C <sub>60</sub> dyads<br><b>Hui Zhao</b> , Zhongping Ou, Zhiguo Zhou, Stephen R. Wilson and Karl M. Kadish                                                                                                        | 912 |
| Pyropheophorbide-carbohydrate conjugates as galectin-specific photosensitizers for photodynamic therapy<br><b>Xiang Zheng</b> , Suresh K. Pandey, Joseph R. Missert, Sue Camacho, Janet Morgan, David A. Bellnier, Kate Rittenhouse-Olson and Ravindra K. Pandey | 913 |
| Spectroelectrochemical investigation of phthalocyanine macrocycle $\pi$ - $\pi$ interaction in symmetrically substituted lanthanide bisphthalocyanines<br><b>Igor V. Zhukov</b> , Victor E. Pushkarev, Alexey V. Ivanov and Larisa G. Tomilova                   | 914 |

# Friday, July 16

## Plenary Lectures

### Grand Ballroom C

|                                |                                                                                                                              |                 |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 8:30 – 9:30 am                 | Low-symmetry phthalocyanines and subphthalocyanines. Towards phthalocyanine-based molecular materials<br><i>Tomás Torres</i> | Abstract<br>322 |
| Chaired by Clifford C. Leznoff |                                                                                                                              |                 |
| 5:00 – 6:00 pm                 | Synthetic porphyrinoid chemistry<br><i>Atsuhiko Osuka</i>                                                                    | Abstract<br>321 |
| Chaired by Jonathan L. Sessler |                                                                                                                              |                 |

## Friday, July 16/AM

### Symposia Lectures

#### Porphyrin-based compounds as tumor diagnostic and therapeutic agents

Chaired by Ravindra K. Pandey and Eva M. Sevick-Muraca

Grand Ballroom A

|          |                                                                                                                                                                                                                                                  |                 |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Target-specific photosensitizers for cancer imaging and treatment<br><b><i>Britton Chance</i></b>                                                                                                                                                | Abstract<br>357 |
| 10:30 am | Photodynamic therapy: structure-activity relationships<br><b><i>David Kessel</i></b>                                                                                                                                                             | Abstract<br>417 |
| 11:00 am | Molecular imaging and tomography with NIR excitable fluorescent probes and time-dependent measurements<br><b><i>Eva M. Sevick-Muraca and Ranadhir Roy</i></b>                                                                                    | Abstract<br>486 |
| 11:30 am | <i>In vivo</i> fluorescence imaging of matrix metalloproteinases and integrins<br><b><i>Chun Li, Shi Ke, Wei Wang and Eva M. Sevick-Muraca</i></b>                                                                                               | Abstract<br>434 |
| 12:00 pm | Tumor diagnostic and therapeutic agents. Optical imaging and photodynamic therapy (PDT)<br><b><i>Ravindra K. Pandey, Yihui Chen, Amy L. Gryshuk, Xiang Zheng, William R. Potter, David A. Bellnier, Samuel Achilefu and Allan R. Oseroff</i></b> | Abstract<br>463 |

#### Synthesis of oligomeric and polymeric phthalocyanines and phthalocyanine analogs

Chaired by Neil B. McKeown and William S. Durfee

Grand Ballroom B

|          |                                                                                                                                                                                                                               |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Synthesis and photophysical properties of new indium phthal- and naphthalocyanines<br><b><i>Michael Hanack</i></b>                                                                                                            | Abstract<br>392 |
| 10:30 am | Self-organization of amphiphilic metallophthalocyanines and polymeric metallophthalocyanines<br><b><i>Mutsumi Kimura</i></b>                                                                                                  | Abstract<br>419 |
| 11:00 am | Hexadecasubstituted phthalocyanines by selective nucleophilic aromatic substitution reactions on hexadecafluorophthalocyanines<br><b><i>Clifford C. Leznoff, José L. Sosa-Sanchez, Annette Hiebert and L. Scott Black</i></b> | Abstract<br>433 |
| 11:30 am | Molecular and macromolecular architectures from phthalocyanine building blocks<br><b><i>Joseph Sly, Benjamin Isare, Michael J. Cook, Alan E. Rowan and Roeland J. M. Nolte</i></b>                                            | Abstract<br>458 |
| 12:00 pm | Macrocyclic complexes of boron: subphthalocyanines and subtriazaporphyrins<br><b><i>William S. Durfee</i></b>                                                                                                                 | Abstract<br>368 |

Friday, July 16/AM  
Symposia Lectures

**Porphyrin and porphyrin-analogue based sensors and sensor arrays**

Chaired by Roberto Paolesse and Vladimir Král

Grand Ballroom C

|          |                                                                                                                                                                                                  |                 |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Optical and electrochemical sensing of biologically important analytes with novel porphyrin receptors<br><b>Vladimir Král, Martin Hub, Martin Valík, Kamil Záruba and Tatiana V. Shishkanova</b> | Abstract<br>424 |
| 10:30 am | Porphyrinic nanosensors for <i>in vivo</i> measurements of biologically active molecules in the cardiovascular system<br><b>Tadeusz Malinski</b>                                                 | Abstract<br>438 |
| 11:00 am | Optical oxygen sensors based on the triplet state quenching of metal porphyrins<br><b>Ichiro Okura</b>                                                                                           | Abstract<br>460 |
| 11:30 am | Colorimetric sensor arrays for artificial olfaction<br><b>Kenneth S. Suslick</b>                                                                                                                 | Abstract<br>497 |
| 12:00 pm | Metalloporphyrins as sensing materials for artificial senses<br><b>Corrado Di Natale</b>                                                                                                         | Abstract<br>366 |

**Spectroscopic studies of heme enzymes**

Chaired by Brian M. Hoffman and Giulietta Smulevich

Grand Ballroom D

|          |                                                                                                                                                                                                                 |                 |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | <sup>1</sup> H NMR study on heme oxygenase from the pathological bacterium <i>Neisserae meningitidis</i><br><b>Gerd N. La Mar, Yangzhong Liu and Tadashi Yoshida</b>                                            | Abstract<br>427 |
| 10:30 am | Magnetic circular dichroism spectroscopy as a probe of heme iron coordination structure: His93Glymyoglobin as a versatile template for modeling heme states<br><b>John H. Dawson and Roshan Perera</b>          | Abstract<br>364 |
| 11:00 am | Insights into catalase-peroxidases by electronic absorption, resonance Raman spectroscopy, and site-directed mutagenesis<br><b>Giulietta Smulevich, Elisa Santoni, Christa Jakopitsch and Christian Obinger</b> | Abstract<br>492 |
| 11:30 am | Nuclear resonant vibrational spectroscopy - A new probe for metals in biology<br><b>Stephen P. Cramer</b>                                                                                                       | Abstract<br>360 |
| 12:00 pm | Heme as a regulatory molecule in biological systems: structural characterization of heme binding in heme-regulated proteins<br><b>Isao Morishima</b>                                                            | Abstract<br>452 |

Friday, July 16/AM  
**Symposia Lectures**

**The renaissance in optical spectroscopy of phthalocyanines and other tetraazaporphyrins**

Chaired by Tebello Nyokong and Hiroaki Isago

**Grand Ballroom E**

|          |                                                                                                                                                                                                                                                             |                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Magnetic circular dichroism spectroscopy: a powerful tool used to understand the electronic structures of porphyrins and phthalocyanines<br><b>Martin J. Stillman and John Mack</b>                                                                         | Abstract<br>494 |
| 10:30 am | Synthesis, spectroscopic, and electrochemical studies of novel benzene- or 2,3-naphthalene-ring-fused tetraazachlorins, -bacteriochlorins, and -isobacteriochlorins<br><b>Nagao Kobayashi, Takamitsu Fukuda, Elena M. Makarova and Evgeny A. Luk'yanets</b> | Abstract<br>421 |
| 11:00 am | Synthesis, spectroscopic properties, aggregation behavior, and in vitro photodynamic activities of multi-carboxylated phthalocyanines<br><b>Chi-Fung Choi, Po-Ting Tsang, Pui-Chi Lo, Wing-Ping Fong, Wing-Hung Ko and Dennis K. P. Ng</b>                  | Abstract<br>456 |
| 11:30 am | Electronic structure of phthalocyanines as viewed from polarized reflection spectra on single crystals<br><b>Jin Mizuguchi</b>                                                                                                                              | Abstract<br>448 |
| 12:00 pm | Photocatalytic activity of metallophthalocyanines encapsulated in porous inorganic materials<br><b>Kuninobu Kasuga, Shusaku Wada, Makoto Handa and Tamotsu Sugimori</b>                                                                                     | Abstract<br>415 |

**Main group metalloporphyrins**

Chaired by Penny J. Brothers and Bernard Boitrel

**Grand Chenier**

|          |                                                                                                                                                                                                   |                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10:00 am | Redox chemistry in boron porphyrins: formation of porphyrin diboranes and an isophlorin complex<br><b>Penny J. Brothers, Michael C. Hodgson, Andre Weiss, Walter Siebert and Peter D. W. Boyd</b> | Abstract<br>353 |
| 10:30 am | Synthesis and structure of oxidized octaalkyltetraphenylporphyrins<br><b>Yohsuke Yamamoto and Kin-ya Akiba</b>                                                                                    | Abstract<br>509 |
| 11:00 am | Dioxygen- and CH-activation involving main group metalloporphyrin photocatalysis: controlled release and partial oxidation of methane<br><b>Günther Knör</b>                                      | Abstract<br>420 |
| 11:30 am | Functionalized porphyrins for the coordination of bismuth<br><b>Bernard Boitrel, Zakaria Halime and Lydie Michaudet</b>                                                                           | Abstract<br>348 |
| 12:00 pm | Core-modified porphyrin building blocks and covalent and non-covalent unsymmetrical porphyrin arrays<br><b>M. Ravikanth</b>                                                                       | Abstract<br>468 |



## Friday, July 16/PM

### Symposia Lectures

#### Porphyrin synthesis

Chaired by M. Graça H. Vicente and Maxwell J. Crossley

Grand Ballroom A

|         |                                                                                                                                                                                                                                                                                                                                 |                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Some new synthetic methods in porphyrin chemistry<br><b>Jonathan S. Lindsey</b>                                                                                                                                                                                                                                                 | Abstract<br>435 |
| 2:30 pm | Friedel-Crafts chemistry of <i>meso</i> -tetraarylporphyrins: an unexpected route to corroles and porphyrin dimers<br><b>Henry J. Callot</b>                                                                                                                                                                                    | Abstract<br>356 |
| 3:00 pm | Design and synthesis of conjugated porphyrin oligomers for nonlinear optical applications<br><b>Harry L. Anderson</b>                                                                                                                                                                                                           | Abstract<br>337 |
| 3:30 pm | Retro Diels-Alder strategy for synthesis of benzoporphyrins and their derivatives<br><b>Noboru Ono, Yusuke Shimizu and Hidemitsu Uno</b>                                                                                                                                                                                        | Abstract<br>461 |
| 4:00 pm | Selective synthesis of chlorin/porphyrin based dyads for studies in artificial photosynthesis<br><b>Franz-Peter Montforts, Sergei Smirnov, Yvonne Abel, Wolfgang Schmidt, Jörn Duwenhorst, Jordi Ceron, Elmar Haake, Michael Wedel, Stephan Leupold, Olaf Kutzki, Lothar Bore, Anna Ruiz, Klaus Rischka and Franziska Löwer</b> | Abstract<br>451 |

#### Phthalocyanine-based materials

Chaired by Michael Hanack and Danilo Dini

Grand Ballroom B

|         |                                                                                                                                                                                                                                             |                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Useful nonlinear optical materials using phthalocyanines, naphthalocyanines and porphyrins<br><b>James S. Shirk, Steven R. Flom, Richard G.S. Pong and Arthur W. Snow</b>                                                                   | Abstract<br>489 |
| 2:30 pm | Electrical conductors of phthalocyanines with axial CN groups<br><b>Tamotsu Inabe, Takehiro Asari, Toshio Naito, Masaki Matsuda, Noriaki Hanasaki and Hiroyuki Tajima</b>                                                                   | Abstract<br>407 |
| 3:00 pm | Synthetic approaches to phthalocyanines and related polymers using carbohydrate reagents<br><b>Daniel J. Sandman</b>                                                                                                                        | Abstract<br>476 |
| 3:30 pm | Synthesis and photovoltaic properties of phthalocyanines<br><b>Yasuhiko Shirota, Toshimitsu Tsuzuki, Teodosio Del Caño, R. Aroca, J. A De Saja, Toshiki Ichisaka, Hiroshi Kageyama, Martin Ottmar, L. R. Subramanian and Michael Hanack</b> | Abstract<br>490 |
| 4:00 pm | Phthalocyanine- and porphyrin-containing polymers of intrinsic microporosity (PIMs)<br><b>Neil B. McKeown, Peter M. Budd, Bader Ghanem, Shabir Hanif, Verena Maffei, Saad Makhseed, Kadhum Msayib and Carin Tattershall</b>                 | Abstract<br>444 |

Friday, July 16/PM  
**Symposia Lectures**

**Supramolecular chemistry and nanosciences of porphyrins**

Chaired by Takuzo Aida and Roeland Nolte

**Grand Ballroom C**

|         |                                                                                                                                                                                                                                                              |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Metalloporphyrin sensors for supramolecular chiral recognition: chiroptical study<br><i>Nina Berova, Milan Balaz, Maryline Giraud, Andrea Holmes, Hideki Ishii, Hiroko Matsuda, Koji Nakanishi, Gennaro Pescitelli, Gloria Proniand and Katsunori Tanaka</i> | Abstract<br>347 |
| 2:30 pm | Self-assembly and self-organization of porphyrinic materials on surfaces<br><i>Charles Michael Drain and James D. Batteas</i>                                                                                                                                | Abstract<br>367 |
| 3:00 pm | Porphyrin assemblies obtained by supramolecular coordination chemistry: chemical catalysis and solution-phase X-ray structures<br><i>Joseph T. Hupp, Jodi L. O'Donnell, Shih-Sheng Sun, David W. Tiedeand and SonBinh T. Nguyen</i>                          | Abstract<br>403 |
| 3:30 pm | Self-assembly of water-soluble meso-substituted porphyrins towards chiral mesophases<br><i>Josep M. Ribó and Joaquim Crusats</i>                                                                                                                             | Abstract<br>469 |
| 4:00 pm | Cross-linked dendrimers as «moldamers» for making synthetic antibodies and nanostructures<br><i>Steven C. Zimmerman</i>                                                                                                                                      | Abstract<br>511 |

**Chemical modelling of heme enzymes and related systems**

Chaired by Yoshinori Naruta and Jean-Claude Marchon

**Grand Ballroom D**

|         |                                                                                                                                                                                                                                            |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Pacman and Hangman porphyrins: small molecule activation by PCET<br><i>Daniel G. Nocera</i>                                                                                                                                                | Abstract<br>457 |
| 2:30 pm | Chemical models of cytochrome P450: reactive intermediates and O-O bond activation<br><i>Wonwoo Nam</i>                                                                                                                                    | Abstract<br>453 |
| 3:00 pm | Active intermediates in oxidation reaction catalyzed by synthetic heme-thiolate complex relevant to cytochrome P450<br><i>Tsunehiko Higuchi</i>                                                                                            | Abstract<br>396 |
| 3:30 pm | Ligand influences on heme-copper dioxygen reactivity<br><i>Kenneth D. Karlin</i>                                                                                                                                                           | Abstract<br>414 |
| 4:00 pm | Chemical modeling of cytochrome c oxidase: new insights into the reaction of heme-Cu heterodinuclear complexes with dioxygen<br><i>Yoshinori Naruta, Takefumi Chishiro, Jin-Gang Liu, Xing-Mei Ouyang, Yuichi Shimazaki and Fumito Tan</i> | Abstract<br>455 |

Friday, July 16/PM  
**Symposia Lectures**

**Interactions of bio-molecules with porphyrins**

Chaired by Masaaki Tabata and Luigi Marzilli

**Grand Ballroom E**

|         |                                                                                                                                                                                                  |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Porphyrins and phthalocyanines as antiviral agents<br><b>Luigi G. Marzilli</b> and <i>Dabney W. Dixon</i>                                                                                        | Abstract<br>442 |
| 2:30 pm | Alkylation of heme by antimalarial peroxides<br><b>Anne Robert, Jérôme Cazelles, Christophe Loup, Montserrat Rodriguez, Katalin Selmecezi and Bernard Meunie</b>                                 | Abstract<br>471 |
| 3:00 pm | Enhancement effects of metalloporphyrins on DNA conformational changes, DNA cleavage and some potential medical applications<br><b>Masaaki Tabata, Nami Hanada, Ahsan Habib and Elvis Nyarko</b> | Abstract<br>498 |
| 3:30 pm | Novel metalloporphyrin pharmaceuticals based on the chemical biology of reactive nitrogen species<br><b>John T. Groves</b>                                                                       | Abstract<br>388 |
| 4:00 pm | Binding properties of water-soluble porphyrin with RNA duplexes<br><b>Tadayuki Uno</b>                                                                                                           | Abstract<br>503 |

**Chemistry and photofunction of (bacterio)chlorophylls**

Chaired by Hitoshi Tamiaki and Ravindra Pandey

**Grand Chenier**

|         |                                                                                                                                                                                                                                                              |                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2:00 pm | Self-aggregation of synthetic chlorophylls bearing a porphyrin, chlorin, or bacteriochlorin $\pi$ -system<br><b>Hitoshi Tamiaki</b>                                                                                                                          | Abstract<br>500 |
| 2:30 pm | Structural characterization of self-assembling porphyrins that mimic the light-harvesting chlorosomes<br><b>Teodor Silviu Balaban</b>                                                                                                                        | Abstract<br>342 |
| 3:00 pm | Self-assembly of light-harvesting polypeptide / pigment complexes for photoenergy transfer system and its dynamic function<br><b>Mamoru Nango</b>                                                                                                            | Abstract<br>454 |
| 3:30 pm | Photochemistry of bacteriochlorophyll derivatives in solution and in protein complexes<br><b>Hugo Scheer, Jörg Dandler, Joanna Fiedor, Leszek Fiedor, Markus Fischer, Rainer Haessner, Nina Kälin, Lennawaty Limantara, Avigdor Scherz and Steffi Schulz</b> | Abstract<br>478 |
| 4:00 pm | Modified chlorins and bacteriochlorins: structures and electronic properties<br><b>M. W. Renner, K. M. Barkigia, B. C. Robinson and Jack Fajer</b>                                                                                                           | Abstract<br>373 |





# ICPP-3 Program Book



## Speaker List





**A**

Aida, Takuzo 23  
 Albinsson, Bo 20  
 Alessio, Enzo 27  
 Amao, Yutaka 24  
 Anderson, Harry L. 67  
 Andrioletti, Bruno 50  
 Armstrong, Neal R. 21  
 Arnold, Dennis P. 22  
 Awaga, Kunio 22

**B**

Baerends, Evert Jan 47  
 Balch, Alan L. 19  
 Banerjee, Ruma 28  
 Barbe, Jean-Michel 50  
 Barrett, Anthony G. M. 28  
 Battersby, Alan R. 43  
 Bekaroglu, Özer 45  
 Bell, Steven E. J. 31  
 Berezin, Dmitry B. 50  
 Berova, Nina 68  
 Bertini, Ivano 13, 44  
 Bhyrappa, Puttaiah 29  
 Boitrel, Bernard 66  
 Borovkov, Victor V. 30  
 Boulatov, Roman 24  
 Bouvet, Marcel 21  
 Boyle, Ross W. 45  
 Brault, Daniel 46  
 Bröring, Martin 50  
 Brothers, Penny J. 66  
 Brown, Kenneth L. 28  
 Brückner, Christian 22  
 Buchler, Johann Walter 43

**C**

Callot, Henry J. 67  
 Cavaleiro, José A. S. 29  
 Chance, Britton 64  
 Chandrashekar, Tavarekere K. 19  
 Che, Chi-Ming 21  
 Claessens, Christian G. 48  
 Cook, Michael J. 10, 18  
 Coutsolelos, A. G. 30  
 Cramer, Stephen P. 65  
 Crossley, Maxwell J. 20  
 Czernuszewicz, Roman S. 24

**D**

D'Souza, Francis 27  
 Dawson, John H. 65  
 DiMagno, Stephen G. 31  
 Dini, Danilo 50  
 Dixon, Dabney W. 48

Di Natale, Corrado 65  
 Donzello, Maria Pia 48  
 Drain, Charles Michael 68  
 Durfee, William S. 64

**E**

Ehrenberg, B. 46  
 Engel, Michael Klaus 19  
 Ercolani, Claudio 22

**F**

Farmer, Patrick J. 27  
 Ferguson, Stuart J. 23  
 Flamigni, Lucia 46  
 Friesne, Richard A. 47  
 Fujii, Hiroshi 49  
 Fukuzumi, Shunichi 11, 25  
 Furuta, Hiroyuki 19

**G**

Gale, Philip A. 25  
 Ghiladi, Reza A. 48  
 Ghosh, Abhik 49  
 Goldberg, David P. 47  
 Goldberg, Israel 23  
 Golding, Bernard T. 28  
 Goodin, David B. 20  
 Gorun, Sergiu M. 45  
 Gossauer, Albert 20  
 Gray, Harry B. 47  
 Green, Michael T. 20  
 Gross, Zeev 21  
 Gryko, Daniel T. 47  
 Guillard, Roger 47  
 Guldi, Dirk Michael 25  
 Gust, Devens 20

**H**

Hanack, Michael 64  
 Harris, Danni L. 47  
 Hasan, Tayyaba 45  
 Hayashi, Takashi 27  
 Hisaeda, Yoshio 28  
 Hoffman, Brian M. 20, 28  
 Holten, Dewey 26  
 Hosseini, Mir Wais 19  
 Hulsbergen, Frans 29  
 Hung, Chen-Hsiung 19  
 Huo, Qun 49  
 Hupp, Joseph T. 68

**I**

Iengo, Elisabetta 30  
 Ikeda, Atsushi 46  
 Ikeda-Saito, Masao 20

Imahori, Hiroshi 46  
 Inabe, Tamotsu 67  
 Inoue, Haruo 50  
 Isago, Hiroaki 45  
 Ishikawa, Naoto 47  
 Islyaikin, Mikhail K. 28  
 Ivanov, Alexey V. 48

**J**

Jiang, Jianzhuang 45  
 Jori, Giulio 46  
 Jux, Norbert 29

**K**

Kajiwara, Yasuhiro 50  
 Kaliya, Oleg L. 24  
 Kano, Koji 30  
 Karlin, Kenneth D. 68  
 Kasuga, Kuninobu 66  
 Keely, Brendan J. 24  
 Kessel, David 64  
 Khalil, Gamal E. 31  
 Kim, Dongho 20  
 Kimura, Mutsumi 64  
 Klyueva, Marija E. 50  
 Knör, Günther 66  
 Kobayashi, Nagao 66  
 Kobuke, Yoshiaki 23  
 Kohnke, Franz H. 26  
 Kojima, Takahiko 30  
 Konishi, Katsuaki 30  
 Král, Vladimir 65  
 Kräutler, Bernhard 10, 18  
 Kubiak, Ryszard 19  
 Kuroda, Yasuhisa 49  
 Kurtikyan, Tigran S. 50

**L**

L'Her, Maurice 24  
 Latos-Grazynski, Lechoslaw 19  
 La Mar, Gerd N. 65  
 Lee, Chang-Hee 26  
 Lemmetyinen, Helge 46  
 Lever, A. Barry P. 22  
 Levy, Julia G. 45  
 Leznoff, Clifford C. 64  
 Li, Chun 64  
 Lindsey, Jonathan S. 67  
 Lomova, Tatyana N. 48  
 Lu, Yi 27

**M**

Mack, John 31  
 Magda, Darren 26  
 Malinski, Tadeusz 65

Marchon, Jean-Claude 26  
 Maree, M. David 48  
 Marletta, Michael A. 23  
 Mauk, A. Grant 27  
 McKeown, Neil B. 67  
 Medforth, Craig J. 26  
 Meissner, Dieter 21  
 Mironov, Andrey F. 22  
 Mizuguchi, Jin 66  
 Mizutani, Tadashi 27  
 Montfort, William R. 23  
 Montforts, Franz-Peter 67  
 Monti, Donato 30  
 Morishima, Isao 65  
 Munro, Orde Q. 31  
 Murphy, Karen A. 31

## N

Nagata, Toshi 30  
 Nakamura, Mikio 31  
 Nardis, Sara 50  
 Naruta, Yoshinori 68  
 Neves, Maria G. P. M. S. 29  
 Ng, Dennis K. P. 66  
 Nolte, Roeland J. M. 64  
 Nyokong, Tebello 24

## O

Odobel, Fabrice 30  
 Okura, Ichiro 65  
 Ono, Noboru 67  
 Ortiz De Montellano, Paul R. 20  
 Osuka, Atsuhiko 14, 63

## P

Pallenberg, Alexander J. 48  
 Pandey, Ravindra K. 64  
 Paolesse, Roberto 47  
 Pasternack, Robert F. 27  
 Pesa, Nela 48  
 Platzek, Johannes 45  
 Purrello, Roberto 27

## R

R. Detty, Michael 19  
 Ravikanth, M. 66  
 Ribó, Josep M. 68  
 Ricchelli, Fernanda 46  
 Röder, B. 46  
 Rodríguez-Morgade, M. Salomé 28  
 Roncucci, Gabrio 48  
 Rosa, Angela 22  
 Rose, Eric 21  
 Rowan, Alan E. 25  
 Ruppert, Romain 49

## S

Sage, J. T. 49  
 Sandman, Daniel J. 67  
 Sato, Naoki 21  
 Satterlee, James D. 49  
 Scheidt, W. Robert 19  
 Schlettwein, Derck 21  
 Schuster, David I. 46  
 Scolaro, Luigi Monsù 31  
 Scott, Michael J. 22  
 Segawa, Hiroshi 30  
 Senge, Mathias O. 26  
 Sessler, Jonathan L. 23  
 Setsune, Jun-ichiro 26  
 Seveck-Muraca, Eva M. 64  
 Shelnutt, John A. 26  
 Shim, Young Key 29  
 Shirai, Hirofusa 24  
 Shirk, James S. 67  
 Shiro, Yoshitsugu 49  
 Shirota, Yasuhiko 67  
 Simonis, Uschi 29  
 Simonneaux, Gérard 21  
 Simpson, M. Cather 31  
 Smulevich, Giulietta 65  
 Solladié, Nathalie 23  
 Stillman, Martin J. 66  
 Stuzhin, Pavel A. 28  
 Sugiura, Ken-ichi 22  
 Sun, Wenfang 29  
 Suslick, Kenneth S. 65

## T

Tagliatesta, Pietro 21  
 Takeuchi, Masayuki 49  
 Tashiro, Kentaro 30  
 Taylor, Peter R. 47  
 Tomé, Augusto C. 50  
 Tomilova, Larisa G. 48  
 Torres, Tomas 14  
 Torres, Tomás 63  
 Turano, Paola 23

## U

Uno, Hidemitsu 49

## V

Valli, Ludovic 49  
 Van Der Donk, Wilfred 28  
 Van Lier, Johan E. 45  
 Vermathen, Martina 29  
 Vicente, M. Graça H. 25  
 Vinogradov, Sergei A. 29

## W

Walker, F. Ann 13, 44  
 Waluk, Jacek 31  
 Wang, Zhongchun 49  
 Wasbotten, Ingar H. 50  
 Watanabe, Yoshihito 27  
 Weiss, Raymond 43  
 Wieghardt, Karl 22  
 Winkler, Jay R. 23  
 Wöhrle, Dieter 43  
 Woo, L. Keith 30

## Y

Yamamoto, Yasuhiko 49  
 Yamamoto, Yohsuke 66  
 Yoshimoto, Soichiro 31

## Z

Zagal, José H. 24  
 Zenkevich, Eduard I. 31  
 Ziegler, Christopher J. 26  
 Zimmerman, Steven C. 68





# ICPP-3 Program Book



## Author List





# A

Abdales, Meirav 387  
Abe, Masako 365  
Abel, Yvonne 451  
Abraham, Yael 370  
Absalom, Mark A. 361, 585, 686  
Achilefu, Samuel 463  
Adamowicz, Ludwik 450  
Adukpo, Genevieve Etomam 771  
Agarwal, Neeraj 586  
Ageeva, Tatiana A. 587, 588  
Agostiano, Angela 589  
Ahn, Tae Kyu 595, 692, 900, 901  
Ahsen, Vefa 590, 672, 674, 675, 777, 903  
Aida, Takuzo 333, 570, 774, 824, 835  
Airs, Ruth L. 416  
Akdas, Huriye 809  
Akiba, Kin-ya 509  
Albinsson, Bo 334, 647, 797, 894  
Alcántara-Flores, José Luis 804  
Aleshchenkov, Sergei E. 653  
Alessio, Enzo 335, 532, 698  
Alexiou, C. 431  
Allen, James W.A. 375  
Alluisetti, Graciela 605  
Almeida, S. 879  
Alonso, Cristina M. A. 554, 869  
Alp, E. E. 561  
Amador, M. F. C. 649  
Amao, Yutaka 336, 704, 856  
Amasaki, Ichiro 591  
Amoia, Angela M. 450, 592  
Amorebieta, Valentín 605  
An, Jin 693  
Anand, V. G. 833  
Andersen, Raymond J. 443  
Anderson, Harry L. 337, 632, 642, 809, 892  
Andreasson, Joakim 593  
Andreu, María F. Jaime 600  
Andrioletti, Bruno 475, 513  
Anet, Frank A. L. 633  
Angelini, Nicola 764  
Aono, Shigetoshi 594  
Appelhans, Dietmar 845  
Araki, Yasuyuki 363, 406, 591, 656, 838  
Aratani, Naoki 595, 700, 781, 832, 901  
Aritome, Isao 596  
Armstrong, Jeremy 829  
Armstrong, Neal R. 338  
Arnold, Dennis P. 339, 597  
Aroca, R. 490  
Arslan, Yadigar 672, 675

Arslanoglu, Yasin 598  
Asari, Takehiro 407  
Assis, Marilda das Dores 599  
Atefi, Farzad 339, 597  
Atilla, Devrim 590  
Attanasi, Orazio A. 768  
Avilov, Igor V. 908  
Awaga, Kunio 340, 655, 851  
Awruch, Josefina 600  
Azizyan, Arsen S. 741  
Azzellini, Gianluca C. 601, 602, 812

# B

Baerends, Evert Jan 341, 474  
Baeza, J. Luis 873  
Bakker, Martin G. 864  
Balaban, Teodor Silviu 342  
Balaz, Milan 347  
Balazs, Yael S. 820  
Balbinot, Domenico 535, 603, 684  
Balch, Alan L. 343  
Ball, L. M. 661  
Ballesteros, Beatriz 873  
Bandyopadhyay, Subhajit 593  
Banerjee, Ruma 344  
Banka, Rakesh 354  
Barata, Joana F. B. 571  
Baratto, Maria C. 798  
Barbe, Jean-Michel 514, 604, 654, 669, 670  
Barbee, R. Wayne 861  
Bari, Sara E. 605  
Barillà, Roberto 423  
Barkigia, K. M. 373  
Barnett, Jon J. 606  
Barrett, Anthony G. M. 345  
Barron, Paul 568  
Basosi, Riccardo 798  
Batteas, James D. 367  
Battersby, Alan R. 325  
Baude, G. 466  
Baveux-Chambenoît, Valérie 614  
Bayır, Zehra Altuntas 719  
Behan, Rachel 607  
Bekaroglu, Özer 346, 625  
Bell, Steven E. J. 515  
Bellnier, David A. 463, 913  
Belmore, Ken 864  
Benavides, Juan 394  
Bench, Barbara A. 759  
Berezin, Boris D. 516, 609  
Berezin, Dmitry B. 516, 608, 609  
Bergami, C. 372  
Bernátková, Marketá 513  
Berova, Nina 347  
Bertini, Ivano 317

Bhaskar, Brahatheeswaran 374  
Bhyrappa, P. 517  
Bigler, Peter 575  
Birge, Robert R. 355  
Birin, Kirill P. 610  
Biryukova, Irina V. 611  
Black, L. Scott 433  
Blades, Holly E. 892  
Blake, Iain M. 612  
Blanco, Leonor 665  
Bogatcheva, Olga V. 707  
Böhm, Fritz 689  
Boitrel, Bernard 348, 613, 614  
Bolotin, Vladimir L. 608  
Boon, Elizabeth M. 441  
Borczyskowski, Christian von 583  
Bore, Lothar 451  
Borisenkova, Svetlana A. 615  
Borovkov, N. 881  
Borovkov, Victor V. 518, 880  
Borrell, José I. 821  
Borrós, Salvador 821  
Bottari, Giovanni 873  
Boulatov, Roman 349  
Bourgogne, Cyril 885  
Bouvet, Marcel 350, 616  
Boyd, Peter D. W. 353  
Boyle, Ross W. 351, 558, 617  
Božidarević, Ivana 482  
Brailey, Jacqueline 592  
Brandès, Stéphane 604  
Brasil, Maria J. S. P. 657  
Brault, Daniel 352  
Bregadze, V. I. 874  
Brehm, M. 466  
Breiling, Martina 618  
Breusova, Maria O. 801  
Briñas, Raymond P. 576, 619  
Bronshtein, I. 369  
Bröring, Martin 519  
Brotherhood, Peter R. 620  
Brothers, Penny J. 353  
Brown, Kenneth L. 354  
Brückner, Christian 355  
Brune, Alicia 593  
Buchler, Johann Walter 326  
Buckel, Wolfgang 381  
Budd, Peter M. 444  
Bulach, Véronique 621, 622  
Buldain, Graciela Y. 783  
Burdet, Fabien 514, 654, 669  
Burn, Paul 890, 891  
Burnham, Paul M. 702

# C

Cabelli, Diane E. 528  
Cadiou, Cyril 799

Caeiro, Filomena 878  
 Cafeo, Grazia 423  
 Callis, James B. 538, 742  
 Callot, Henry J. 356, 713, 814, 815  
 Calvete, Mario 524  
 Camacho, Sue 913  
 Canard, Gabriel 604  
 Cantu, Ricardo 362  
 Carroll, Partick J. 884  
 Cascalheira, J. M. 649  
 Casilli, Serena 574, 589, 806, 880, 881  
 Casteel, M. J. 661  
 Castriciano, Andrea 547  
 Castriciano, Maria Angela 623, 624, 811  
 Catalano, Vincent J. 660  
 Cavaleiro, José A. S. 520, 554, 571, 649, 650, 782, 868, 869, 870, 877, 878, 879  
 Cazelles, Jérôme 471  
 Cerda, K. P. Coronado 724  
 Cerdeira, Fernando 657  
 Ceron, Jordi 451  
 Ceyhan, Tanju 625  
 Chalbot, M.-C. 522  
 Chambrier, Isabelle 702  
 Chance, Britton 357  
 Chandra, Tilak 354  
 Chandrashekar, Tavarekere K. 358, 802, 822  
 Chang, C. K. 896  
 Chang, Shu-Hao 628  
 Charalambidis, G. 634  
 Che, Chi-Ming 359  
 Chen, J. S. 431  
 Chen, James C. 557  
 Chen, Jun 437  
 Chen, Nai-sheng 626, 627, 694, 695, 895  
 Chen, Ping-Yu 629  
 Chen, Yan-Mei 695  
 Chen, Yihui 463, 671  
 Cheng, Kai Fan 862  
 Cheng, Ru-Jen 628, 629  
 Cheprakov, Andrei V. 576, 653, 884  
 Chien, Chih-Hsien 629  
 Chirvony, Vladimir S. 608  
 Chishiro, Takefumi 455  
 Cho, Dae Won 714  
 Cho, Dong-Gyu 437  
 Choi, Chi-Fung 456  
 Chucharev, Vladimir 430  
 Cichos, Frank 583  
 Cid, J. José 873  
 Claessens, Christian G. 521, 630

Clark, J. Caleb 631  
 Cohen, Michael S. 374  
 Cohen, Seth 840  
 Collins, Hazel A. 632  
 Collins, James 633  
 Collman, James P. 349  
 Collyer, Charles A. 898  
 Colominas, Carles 821  
 Compans, Richard W. 525  
 Conoci, Sabrina 574, 880  
 Conradie, Jeanet 659  
 Cook, Michael J. 318, 458, 702, 703, 819  
 Cortez, Cecilia 437  
 Costamagna, Juan 665  
 Coutsolelos, A. G. 522, 634  
 Cramer, Stephen P. 360  
 Crossley, Maxwell J. 361, 585, 612, 620, 643, 686, 725, 766, 787, 843, 898  
 Crusats, Joaquim 469, 635  
 Cryle, Max J. 462  
 Cullen, Aaron 829  
 Curi, Rebeca B. 697  
 Czader, Arkadiusz 636  
 Czernuszewicz, Roman S. 362, 636, 905, 906

## D

D'Amico, Arnaldo 548  
 D'Souza, Francis 363, 656, 838  
 D'Souza, Valerian T. 637  
 Dalton, Larry R. 538, 742  
 Daltrop, Oliver 375  
 Dandler, Jörg 478  
 Daniell, Heather W. 355  
 Danilova, Elena A. 707  
 Daphnomili, D. 634  
 David, M. 431  
 Dawson, John H. 364  
 Decurtins, Silvio 676, 757  
 Degoricija, Lovorka 829  
 Deiters, Emmanuel 621, 622  
 Delfino, José M. 783  
 Del Caño, Teodosio 490  
 Del Sole, Roberta 767, 768  
 Del Turco, D. 827, 828  
 Demina, Lyudmila I. 666  
 Deng, Dayi 462  
 Depke, G. 466  
 Derbin, A. 882  
 Derkacheva, Valentina M. 651  
 Detty, Michael R. 365  
 Deutsch, Howard 633  
 DeVoss, James J. 462  
 Dewa, Takehisa 734  
 De Groot, Huub 530

De Jong, R. L. P. 883  
 De La Escosura, Andrés 873  
 De La Garza, Linda 593  
 De La Torre, Gema 873  
 De Luca, Agnese 767  
 De Luca, Giovanna 811  
 De Saja, J. A. 490  
 Dharamdat, C. 431  
 Diamantopoulos, C. 634  
 Dicelio, Lelia E. 600  
 Didier, Amandine 639  
 DiMagno, Stephen G. 523  
 Ding'er, Hatice A. 640  
 Dini, Danilo 524  
 Dixon, Dabney W. 442, 525, 641  
 Dixon, Dustin 696  
 Di Natale, Corrado 366, 548  
 Di Paolo, Roberto 638  
 Di Vaira, M. 634  
 Dobrawa, R. 698  
 Dobulans, R. 616  
 Doctorovich, Fabio 605  
 Domingues, M. R. M. 650  
 Donzello, Maria Pia 372, 526, 846  
 Dougherty, Thomas J. 557  
 Drain, Charles Michael 367, 862  
 Drechsel, Sueli Maria 780  
 Drobizhev, Mikhail 642  
 Du, Guodong 580  
 Duan, Wubiao 617  
 Duarte, Ricardo R. 878  
 Duarte, Teresa Figueira 885  
 Dunn, Alexander R. 382  
 Durbin, S. M. 561  
 Durfee, William S. 368  
 Durmus, Mahmut 674  
 Durr, Heinz 593  
 Duwenhorst, Jörn 451  
 Dzenis, Yuliya 642

## E

E, Wenbo 643, 787  
 Easson, Michael W. 644  
 Ebeoglu, M. Ali 672, 675  
 Ebert, W. 466  
 Echegoyen, Luis 481, 747, 877  
 Eckert, Anke K. 808  
 Efimov, Alexander 430  
 Efimova, Svetlana V. 733  
 Ehrenberg, B. 369  
 Eigler, Siegfried 535, 645  
 Ellison, Mary K. 693  
 Enakieva, Yulia Yu. 646, 666  
 Eng, Mattias 647  
 Engel, Michael Klaus 371  
 Ercolani, Claudio 372, 495, 526, 846

Erkelens, Cornelis 530, 883  
 Ermilov, Evgeni 472, 689, 860  
 Escudero, Carlos 635  
 Esdaile, Louisa J. 597  
 Esperanza, Sagrario 808  
 Espinosa, Enrique 514, 669, 670

## F

Fachechi, L. 827, 828  
 Faig, Marcos M. 600  
 Fajer, Jack 373  
 Fang, Ming 648  
 Faraone-Mennella, Jasmin 508  
 Farmer, Patrick J. 374  
 Faure, Sébastien 841  
 Faustino, Maria A. F. 571, 649, 650, 878, 879  
 Fedorova, Tatyana M. 651  
 Ferguson, Stuart J. 375  
 Fernández-Lázaro, Fernando 652  
 Ferrand, Yann 491  
 Ferreira, Alba D. Q. 697  
 Ferrer-Correia, A. J. 650  
 Ferro, Stefania 870  
 Ferro, Victor R. 706  
 Fiedor, Joanna 478  
 Fiedor, Leszek 478  
 Filatov, Igor V. 908  
 Filippone, Paolino 768  
 Finikova, Olga S. 576, 653, 884  
 Fischer, Jean 670  
 Fischer, Markus 478  
 Flamigni, Lucia 376  
 Fleitz, Paul A. 809, 848, 849  
 Flom, Steven R. 489, 680  
 Fonavs, E. 616  
 Fondren, L. Dalila 864  
 Fong, Wing-Ping 456, 754  
 Ford, Peter C. 543, 741, 748, 749  
 Fountain, Mark 889  
 Fox, Joseph P. 662  
 Frampton, Michael J. 892  
 Franco, Ricardo 638  
 Frank, Harry A. 355  
 Frémond, Laurent 654  
 Frenzel, T. 466  
 Friesner, Richard A. 377  
 Fronczek, Franck R. 752, 753, 758  
 Fujii, Hiroshi 527  
 Fujimori, Masato 340, 655, 851  
 Fukuda, Takamitsu 421, 691, 729  
 Fukumori, Yoshihiro 565  
 Fukuzumi, Shunichi 319, 406, 591 686, 726, 786, 787, 788  
 Furukawa, Hirotaka 897  
 Furukawa, Ko 700, 833  
 Furuta, Hiroyuki 378, 705,

772, 773

## G

Gaberkorn, Anna A. 846  
 Gadde, Suresh 363, 656  
 Gaffo, Luciana 657  
 Gale, Philip A. 329  
 Galli, P. 372  
 Garcia, Rachel 882  
 Garcia-Frutos, Eva M. 658  
 Garcia de la Vega, J. M. 706  
 Garnovskii, Alexander 665  
 Garramone, Gaetano 806  
 Gast, P. 883  
 Gazeau, Stéphanie 440, 487, 761  
 Gengenbach, Alan J. 606  
 Georgakoudi, Irene 394  
 Georgiev, G. 561  
 Geremia, Silvano 335  
 Ghanem, Bader 444  
 Ghiggino, Kenneth P. 787  
 Ghiladi, Reza A. 528  
 Ghosh, Abhik 529, 579, 659, 840, 852, 853, 859  
 Ghosh, Brahma 660  
 Giansanti, Stefania 798  
 Giles, Carlos 657  
 Gill, Anila F. 641  
 Gill, Hubert S. 482  
 Giotta, Livia 589  
 Giraud, Maryline 347  
 Gisselbrecht, Jean-Paul 814, 815  
 Giuntini, Francesca 878  
 Gloe, Karsten 845  
 Gloe, Kerstin 845  
 Gold, A. 661  
 Goldberg, David P. 379, 662, 909  
 Goldberg, Israel 380, 820  
 Goldberg, Ruthy 387  
 Golding, Bernard T. 381  
 Golubchikov, Oleg A. 588, 908  
 Golubkov, Galina 663  
 Gonçalves, Diana P. N. 664  
 González, Lucy 665  
 González-Rodríguez, David 630  
 Goodin, David B. 382  
 Gorbunova, Yulia G. 610, 611, 646, 666, 762  
 Gorden, Anne E.V. 769  
 Gordon, Pamela 769  
 Gornukhina, Olga V. 588  
 Gorski, Alexander 577  
 Gorun, Sergiu M. 383, 759  
 Gossauer, Albert 384  
 Gossett, Kristi 848, 849  
 Gottumukkala, Vijay 667  
 Gouloumis, Andreas 873

Gouterman, Martin P. 538, 742  
 Grammatikopoulou, M. 634  
 Gray, Harry B. 382, 385  
 Green, Michael T. 386, 607, 844  
 Greenman, John 351, 558, 617  
 Grin, Michael A. 668  
 Gros, Claude P. 514, 654, 669, 670, 788  
 Gross, Maurice 803, 885  
 Gross, Zeev 385, 387, 663, 820  
 Groves, John T. 388, 462  
 Grubina, Lyudmila A. 908  
 Gryko, Daniel T. 389, 830  
 Gryllos, L. 522  
 Gryshuk, Amy L. 463, 671  
 Guillard, Roger 390, 514, 604, 654, 669, 670, 788, 841  
 Gül, Ahmet 876, 899  
 Guldi, Dirk M. 330, 481, 574, 684, 747, 877  
 Gümüs, Gülay 672, 675  
 Guo, Fengqi 568  
 Gupta, Iti 673  
 Gürek, Ayse Gül 674  
 Gürol, Ilke 672, 675  
 Gust, Devens 391, 593  
 Gutiérrez, Ana-María. 652  
 Gutierrez, María Marta 605

## H

Ha, Jennifer L. 606  
 Haake, Elmar 451  
 Haas, Marco 676, 757  
 Habdas, Jan 677  
 Habib, Ahsan 498, 678  
 Hackbarth, Steffen 472, 860  
 Haddad, Raid E. 445, 487, 679  
 Haessner, Rainer 478  
 Hakspiel, Shelly J. 680  
 Halime, Zakaria 348  
 Halma, Matilte 780  
 Hamatani, Satoshi 533  
 Hambright, Peter 882  
 Hammer, Robert P. 836  
 Hamuryudan, Esin 598  
 Han, Guang-Fan 564  
 Hanack, Michael 392, 490, 524  
 Hanada, Nami 498  
 Hanasaki, Noriaki 407  
 Handa, Makoto 415  
 Hanif, Shabir 444  
 Hanke, Daniella 681  
 Hansen, Terkel 852, 853  
 Hao, Erhong 682  
 Harada, Ryosuke 540  
 Hargus, Jodie A. 683  
 Harmjanz, Michael 482

Harris, Danni L. 393  
 Harrison, Mandy 696  
 Hartmann, Thomas 593  
 Hartnagel, Uwe 603, 684  
 Hartnell, Regan D. 339  
 Harvey, John D. 584, 685  
 Harvey, Pierre D. 841  
 Hasan, Tayyaba 394  
 Hasobe, Taku 406, 686  
 Hata, Hiroshi 687  
 Hatscher, Sabine 817  
 Hatzimarinaki, Maria 684  
 Hayashi, Takashi 395, 397, 596, 763, 775, 823  
 Hays, Anna-Maria A. 382  
 He, Xiang 462  
 Hegedus, Louis S. 658  
 Heinrichs, David E. 842  
 Hell, Christian 519  
 Helmreich, Matthias 472, 535, 688, 689  
 Hembury, Guy A. 518  
 Hemmi, Hikaru 581  
 Herranz, M. Ángeles 747  
 Hidalgo, A. A. 854  
 Hiebert, Annette 433  
 Higham, Christopher W. 375  
 Higuchi, Tsunehiko 396  
 Hino, Tomoya 565  
 Hirose, Yuka 690  
 Hirsch, Andreas 472, 684, 689  
 Hisaeda, Yoshio 395, 397, 596, 763, 775, 823  
 Hodgkiss, Justin M. 736  
 Hodgson, Margaret J. 339  
 Hodgson, Michael C. 353  
 Hoffman, Brian M. 345, 398, 399  
 Hok, Saphon 487  
 Holmes, Andrea 347  
 Holten, Dewey 400  
 Homma, Shigetsugu 691  
 Hong, Hu-ming 895  
 Hong, Sung-Jin 429  
 Hori, Hiroshi 565  
 Horikawa, Noriko 563  
 Horner, John H. 911  
 Hoshino, Akito 552  
 Hosomizu, Kohei 686, 692  
 Hosseini, Mir Wais 401, 621, 622  
 Hostletter, Jonas M. 805  
 Hu, Chuanjiang 479, 693  
 Huang, Jian-Dong 694, 695, 754  
 Huang, Jin-Ling 626, 694, 695  
 Huang, Mian 893  
 Huang, Shirley 441  
 Huang, Xin-Hui 443  
 Hub, Martin 424

Hud, Nicholas V. 633  
 Hudson, Rob 351  
 Huggins, Michael T. 696  
 Hughes, David L. 702  
 Hulsbergen, Frans 530  
 Hung, Chen-Hsiung 402  
 Hung, Yu-Chun 750  
 Hunter, Neil 898  
 Huo, Qun 531  
 Hupp, Joseph T. 403  
 Hutchison, James A. 787  
 Hwang, In-Wook 900

## I

Iamamoto, Yassuko 697  
 Ichisaka, Toshiki 490  
 Iengo, Elisabetta 335, 532, 698  
 Iglesias, Rodrigo S. 630  
 Ikeda, Atsushi 404  
 Ikeda, Chusaku 699  
 Ikeda-Saito, Masao 405  
 Ikeue, Takahisa 700  
 Ikezaki, Akira 701  
 Ilagan, Robielyn P. 355  
 Imahori, Hiroshi 406, 686, 692  
 Immoos, Chad E. 374  
 Inabe, Tamotsu 407  
 Inoue, Haruo 533  
 Inoue, Hidenari 699  
 Inoue, Yoshihisa 518, 880  
 Isaac, Meden 566  
 Isago, Hiroaki 408  
 Isare, Benjamin 458, 702, 703  
 Ishigure, Syuichi 704  
 Ishii, Hideki 347  
 Ishikawa, Fumiaki 772  
 Ishikawa, Naoto 409  
 Ishimori, Koichiro 779  
 Ishizuka, Tomoya 378, 705  
 Islyaikin, Mikhail K. 410, 706, 707, 808  
 Itaya, Kingo 582  
 Ito, Osamu 363, 406, 591, 656, 838  
 Itou, Mitsunari 363, 656, 838  
 Ivancich, Anabella 708  
 Ivanov, Alexey V. 534, 572, 709, 866, 914  
 Ivanova, Svetlana S. 710, 711  
 Ivanova, Yuliya B. 846  
 Ivatury, Rao 861

## J

Jain, Swapan S. 633  
 Jakopitsch, Christa 492, 708  
 Jakus, Judit 564  
 Janaki, T. A. 792  
 Janczak, Jan 737  
 Jaung, Jae Yun 794, 795

Jayaraj, K. 661  
 Jayawickramarajah, Janarthanan 484, 712  
 Jeandon, Christophe 713, 814, 815  
 Jeffress, K. 661  
 Jensen, Tim 752  
 Jeong, Dae Hong 714  
 Jeong, Goojin 593  
 Jerez, L. M. Blanco 724  
 Jesorka, A. 751  
 Jia, Chung-Yang 757  
 Jia, Songling 487  
 Jiang, Jianzhuang 411  
 Jiao, Lijuan 715  
 Jimenez, Angel 814  
 Johansen, Inge 853  
 Jori, Giulio 412, 559, 870  
 Jux, Norbert 472, 535, 603, 645, 684, 688, 689

## K

Kabanova, Xenia V. 709  
 Kadish, Karl M. 372, 514, 579, 643, 654, 787, 830, 875, 882, 909, 912  
 Kageyama, Hiroshi 490  
 Kahlal, Samia 426  
 Kajiwarra, Yasuhiro 536  
 Kalashnikov, Valeriy V. 716  
 Kalashnikova, Irina P. 717, 718  
 Kälén, Nina 478  
 Kaliya, Oleg L. 413, 615, 651  
 Kalkan, Ayfer 719  
 Kalyenova, Anna N. 707  
 Kamada, Kenji 730  
 Kamat, Prashant V. 686  
 Kandaz, Mehmet 720, 721  
 Kang, ChulHee 562, 826  
 Kano, Koji 537  
 Karlin, Kenneth D. 414  
 Karotki, Aliaksandr 642  
 Karow, David S. 441  
 Kashiwagi, Yukiyasu 406, 591, 686  
 Kasper, Amelia 829  
 Kasuga, Kuninobu 415  
 Katayev, Evgeny 793  
 Kato, Aiko 496, 722  
 Kato, Taku 819  
 Kato, Tatsuhisa 700, 833  
 Katterle, M. 751  
 Kawabata, Shigeki 723  
 Kawai, Tomoji 722  
 Ke, Shi 434  
 Keely, Brendan J. 416, 893  
 Kefokeris, K. 522  
 Keizer, Steven P. 759  
 Kelting, C. 480

Keogh, D. Webster 769  
 Kepczynski, M. 369  
 Keskin, Semra 721  
 Kessel, David 417  
 Keyes, T. E. 800  
 Khalil, Gamal E. 538, 742  
 Kharisov, Boris 665, 724  
 Khelevina, Olga G. 706  
 Khoury, Tony 725  
 Kikuchi, Jun-ichi 404  
 Kikuzawa, Yoshihiro 551  
 Kim, Dongho 418, 595, 692, 714, 781, 900, 901  
 Kim, Eun Kyung 564  
 Kim, Hyeon K. 436  
 Kim, Judy E. 508  
 Kim, Seong Keun 692  
 Kimura, Mutsumi 419  
 Kinbara, Kazushi 774  
 Kiseleva, Ekaterina N. 728  
 Kishi, Takashi 726  
 Kitagawa, Susumu 897  
 Kitagawa, Teizo 594  
 Kitagishi, Hiroaki 537  
 Klyuev, Mikhail V. 727, 728  
 Klyueva, Marija E. 539, 727, 728  
 Knör, Günther 420  
 Knyukshto, Valery N. 907, 908  
 Ko, Dah Mee 900  
 Ko, Wing-Hung 456, 754  
 Kobayashi, Katsuaki 594  
 Kobayashi, Nagao 421, 431, 545, 691, 729  
 Kobayashi, Yuka 774  
 Kobuke, Yoshiaki 422, 730  
 Koçak, Makbule B. 640  
 Kodis, Gerdenis 593  
 Kogan, Eugenia G. 534  
 Köhler, Thomas 484, 577, 813  
 Kohnke, Franz H. 423  
 Koifman, Oskar I. 587, 731, 732, 733, 881  
 Kojima, Takahiko 540  
 Komatsu, Koichi 824  
 Kondo, Masaharu 704, 734  
 Konishi, Katsuaki 541  
 Konishi, Toshifumi 404  
 Korzhenevsky, Andrey B. 732, 733  
 Kosareva, Olga V. 728  
 Koshiyama, Tomomi 506  
 Král, Vladimír 424, 513, 735  
 Králová, Jarmila 735  
 Kräutler, Bernhard 320  
 Krawczuk, Paul J. 877  
 Krebs, Carsten 607, 844  
 Krivokapić, Alexander 736  
 Krylova, Elena V. 732

Kubiak, Ryszard 425, 737  
 Kumagai, Akihiro 533  
 Kumar, M. Ravi 738, 739  
 Kumita, Hideyuki 565  
 Kuppusamy, Periannan 791  
 Kurek, Stefan S. 587  
 Kuriyan, John 441  
 Kuroda, Yasuhisa 542  
 Kuroki, Kenji 573  
 Kurotobi, Kei 740  
 Kurtikyan, Tigran S. 543, 741, 748  
 Kutzki, Olaf 451  
 Kuz'min, Sergei G. 413

## L

L'Her, Maurice 426, 799  
 Ladomenou, K. 522  
 Lao, Lilian 566  
 Lara, Katherine K. 355  
 Lares, Monica R. 606  
 Larsen, Randy W. 562, 825  
 Lash, Timothy D. 362  
 Latos-Grazynski, Lechoslaw 428  
 Lau, Kimberly S. 538, 742  
 Lauceri, Rosaria 467  
 Laurent, Boyd A. 743  
 La Mar, Gerd N. 427  
 Lecane, Philip 437  
 Lee, Chang-Hee 429  
 Lee, Chi-Hang 439, 744  
 Lee, Christal O. 538, 742  
 Lee, Jennifer C. 508  
 Lee, Jongcheol 564  
 Lee, Kee-In 564  
 Lemmetyinen, Helge 430, 787  
 Lensen, Marga C. 745  
 Leu, B. 561  
 Leupold, Stephan 451, 746  
 Lever, A. Barry P. 431  
 Levy, Julia G. 432  
 Leznoff, Clifford C. 433  
 Le Maux, Paul 491  
 Li, Chun 434  
 Li, Ke 481, 747  
 Li, Ming 479  
 Liddell, Paul A. 593  
 Liegel, Rodrigo M. 602, 812  
 Lightner, David A. 660  
 Lim, Mark David 748, 749  
 Limantara, Lennawaty 478  
 Lin, Charles 394  
 Lin, Chia-Liang 750  
 Lin, Ching-Yao 750  
 Lin, Yu-Chin 750  
 Lindsey, Jonathan S. 435  
 Litwinski, C. 751  
 Liu, Chih-Ming 750

Liu, Hai-Yang 896  
 Liu, Jin-Gang 455  
 Liu, Wei 752, 753  
 Liu, Yangzhong 427, 883  
 Ljungdahl, Thomas 647, 797  
 Lo, Chen-Fu 750  
 Lo, Pui-Chi 456, 754  
 Locos, Oliver B. 597  
 Lombardo, Domenico 764  
 Lomova, Tatyana N. 544, 707, 728, 755, 756  
 Longoria, Enrique 665  
 Loosli, Claudia 676, 757  
 Lopez, Ruben Fernandez 381  
 Lorkovic, Ivan M. 748  
 Loup, Christophe 471  
 Löwer, Franziska 451  
 Lu, Yi 436  
 Lugtenburg, J. 883  
 Luguya, Raymond 758  
 Luk'yanets, Evgeny A. 413, 421, 651, 760

## M

Ma, Y. 431  
 MacGillivray, Ross T.A. 443  
 Mack, John 494, 545, 759, 842  
 Madejska, Iwona 677  
 Maeda, Hiromitsu 378, 639  
 Maekawa, Hirofumi 555  
 Maes, Estelle M. 592, 905, 906  
 Maffei, Verena 444  
 Magaraggia, Michela 870  
 Magda, Darren J. 437, 889  
 Magyar, John S. 508  
 Mahammed, Atif 385, 387  
 Maher, Kristin N. 361  
 Maheut, Géraldine 440, 761  
 Makarova, Elena A. 421, 760  
 Makhseed, Saad 444  
 Mal'tsev, Ivan A. 608  
 Malinski, Tadeusz 438  
 Mandal, Braja K. 439, 744  
 Mandimutsira, Beaven S. 662, 909  
 Mandoj, Federica 553  
 Manera, Maria G. 548  
 Manoussakis, N. 522  
 Marchon, Jean-Claude 440, 487, 679, 761  
 Maree, M. David 546  
 Marletta, Giovanni 880  
 Marletta, Michael A. 441  
 Marques, Helder M. 354  
 Mårtensson, Jerker 647, 797, 894  
 Martín-Gomis, Luis 652  
 Martínez-Díaz, Maria Victoria 869, 873

Martirosyan, Garik G. 741  
 Martynov, Alexander G. 762  
 Marzilli, Luigi G. 442, 525  
 Matano, Yoshihiro 692  
 Mathies, Richard A. 441  
 Matsouki, N. 634  
 Matsuda, Hiroko 347  
 Matsuda, Masaki 407  
 Matsuda, Yoshihisa 540  
 Matsueda, Satoshi 858  
 Matsui, Toshitaka 405  
 Matsunami, Masato 555  
 Matsuo, Takashi 395, 763  
 Matsuura, Koji 565  
 Mattheus, C. 480  
 Mauk, A. Grant 443  
 Mazzaglia, Antonino 764, 765  
 Mazzetto, Selma E. 768  
 McCarthy, Jason R. 355  
 McCarty, Amy L. 838  
 McCauley, Kevin M. 504  
 McDonald, James A. 361, 766, 898  
 McEwan, Kenneth J. 524, 809  
 McKeown, Neil B. 444  
 McLean, Daniel G. 809  
 Medforth, Craig J. 445, 487, 679  
 Meissner, Dieter 446  
 Mele, Giuseppe 767, 768  
 Melfi, Patricia J. 769  
 Meltzman, Shay 370  
 Mendez, U. Ortiz 724  
 Mendez-Rojas, M. A. 724  
 Mendiratta, S. K. 649  
 Meng, Fanqing 642  
 Mengoni, Eleonora 600  
 Mentec, Arnaud 426  
 Meunier, Bernard 471  
 Micali, Norberto 547, 623, 624, 764, 811  
 Michaelis, Esther 770  
 Michaelis, W. 480  
 Michaudet, Lydie 348  
 Michl, G. 466  
 Mikšovská, Jaroslava 562, 825  
 Mironov, Andrey F. 447, 668  
 Missert, Joseph R. 913  
 Mita, Hajime 581  
 Mitchell, Reginald H. 593  
 Miyasaka, Hitoshi 496, 722, 790  
 Mizuguchi, Jin 448  
 Mizutani, Tadashi 449, 897  
 Mody, Tarak 867  
 Molodkina, Ol'ga V. 846  
 Monacelli, F. 372  
 Monsù Scolaro, Luigi 547  
 Montfort, William R. 450, 592, 905, 906

Montforts, Franz-Peter 451, 618, 681, 746, 771, 818  
 Monti, Donato 548  
 Montoro, Luciano A. 697  
 Moore, Ana L. 391, 593  
 Moore, Thomas A. 391, 593  
 Moreira, Maria Sílvia M. 697  
 Moreira, Wania C. 657  
 Morgan, Janet 913  
 Mori, Shigeki 772  
 Mori, Yukie 692  
 Morimoto, Tatsuki 378, 773  
 Morin, S. 431  
 Morishima, Isao 452, 779  
 Motorina, Elena V. 756  
 Mozghzhukhina, Elena G. 756  
 Msayib, Kadhum 444  
 Munro, Orde Q. 479, 549  
 Muraoka, Takahiro 774  
 Murata, Dai 775  
 Murphy, Karen A. 550, 632, 776  
 Musluoglu, Emel 672, 675, 777  
 Muzikante, I. 616  
 Mwakwari, Celinah 778

## N

Na, Hee-Kyung 429  
 Nagano, Shingo 779  
 Nagata, Morio 704, 734  
 Nagata, Toshi 551  
 Naito, Toshio 407  
 Nakagaki, Shirley 780  
 Nakamura, Mikio 552, 701, 785  
 Nakamura, Takashi 900  
 Nakamura, Yasuyuki 781  
 Nakanishi, Koji 347  
 Nakazaki, Jotaro 563  
 Nam, Wonwoo 453  
 Nango, Mamoru 454, 704, 734  
 Nardis, Sara 464, 553, 574  
 Naruta, Yoshinori 455  
 Nascimento, Otaciro R. 697  
 Nassi, Achille 799  
 Naumovski, Louie 437  
 Neal, Teresa J. 479  
 Nefedov, Sergey E. 646, 709  
 Neves, Maria G. P. M. S. 520, 554, 571, 649, 650, 782, 868, 869, 870, 878, 879  
 Newcomb, Martin 911  
 Neya, Saburo 785  
 Ng, Dennis K. P. 456, 695, 754  
 Ng, Nga-Chun 896  
 Ngameni, Emmanuel 799  
 Nguyen, SonBinh T. 403  
 Ni, Yuhua 531  
 Niedballa, U. 466

Niemevez, Fernando 783  
 Nierengarten, Jean-François 885  
 Nigro, Alycen P. 382  
 Nikles, David E. 864  
 Nikolaeva, Olga I. 587  
 Nishiguchi, Ikuzo 555  
 Nishimura, Yoshinobu 692  
 Nishiyama, Takashi 831  
 Nissen, Mark S. 562, 825, 826  
 Niu, Xiao-yu 627  
 Njanja-Tcheunkeu, Evangeline 799  
 Nöbel, M. 472  
 Nocera, Daniel G. 457, 736  
 Nolte, Roeland J. M. 458, 703, 745, 863  
 Nonell, Santiago 821  
 Nonomura, Kazuteru 770  
 Noushazar, M. 883  
 Nurco, Daniel J. 487  
 Nyarko, Elvis 498  
 Nyokong, Tebello 459, 784

## O

O'Donnell, Jodi L. 403  
 O'Keeffe, G. 807  
 Oakes, Roma E. 515  
 Obinger, Christian 492, 708  
 Obirai, Joe 459  
 Odobel, Fabrice 556  
 Ogawa, Kazuya 730  
 Ogo, Seiji 726  
 Ogunsipe, A.O. 784  
 Ohashi, Masataka 506  
 Ohgo, Yoshiki 552, 785  
 Ohkubo, Kei 786, 787  
 Ohno-Okumura, Eiko 819  
 Ohta, Koji 730  
 Ohta, Takehiro 594  
 Ojiri, Tetsuya 726  
 Okada, Shinsuke 563  
 Okamoto, Ken 726, 788  
 Okawa, Hisashi 540  
 Okur, Ali Ihsan 899  
 Okura, Ichiro 460  
 Olabe, José A. 605  
 Oliveira, O. N. Jr 854  
 Omari, S. al 472  
 Ongayi, Owendi 789  
 Ono, Noboru 461, 573, 834, 871  
 Ortíz, Javier 652  
 Ortiz de Montellano, Paul R. 462, 528  
 Oseroff, Allan R. 463, 671  
 Osuka, Atsuhiko 321, 595, 687, 699, 700, 705, 723, 740, 772, 773, 781, 824, 832, 833, 850, 900, 901, 902



Ottmar, Martin 490  
 Ou, Zhongping 372, 514, 643,  
 787, 830, 909, 912  
 Ouyang, Xing-Mei 455  
 Ovesen, Helge 852, 853  
 Oyama, Tomomi 790  
 Öztürk, Z. Ziya 672, 675

## P

Páez, Maritza 510  
 Page, Michael J. 443  
 Paixão, P. 879  
 Pallenberg, Alexander J. 557  
 Palmer, Phillip 769  
 Pan, Duohai 441  
 Pan, Hai-bo 626  
 Panarin, Andrey Yu. 608  
 Panda, Predepta 429  
 Pandey, Ravindra K. 463, 557,  
 671, 913  
 Pandey, Suresh K. 913  
 Pandian, R. P. 792  
 Pandian, Ramasamy P. 791  
 Pantos, Gheorghe Dan 639,  
 793, 808  
 Paolesse, Roberto 464, 548,  
 553, 574  
 Paramaesarvan, Mayuri 898  
 Parejo, Concepción 652  
 Park, Dong-Soo 794, 795  
 Park, HaJeung 562, 826  
 Park, Jong-Ho 794, 795  
 Pascu, Sofia 872  
 Pasternack, Robert F. 465, 810  
 Patanè, Salvatore 764, 811  
 Patterson, James C. 748  
 Paul, Christine 491  
 Paz, S. G. 649  
 Pearson, Nicole 549  
 Pécaut, Jacques 440, 487, 761  
 Pegado, Inês 878  
 Pellicena, Patricia 441  
 Pendon, Zeus D. 355  
 Penno, Dirk 519  
 Pereira, Ana M. V. M. 869  
 Pereira, Inês A. C. 638  
 Pereira, Patrícia 638  
 Perera, Roshan 364  
 Pereyda, Robert E. 606  
 Periera, Alban 443  
 Peritore, Carina 796  
 Perrée-Fauvet, M. 522  
 Pesa, Nela 558  
 Pescitelli, Gennaro 347  
 Petrov, Evgeny P. 583  
 Petrova, Ekaterina G. 615  
 Pettersson, Karin 797, 894

Pfister, Thomas D. 436  
 Phillips, David 632, 776  
 Pierik, Antonio J. 381  
 Pignataro, Bruno 880  
 Pimkov, Igor' 846  
 Pinto, D. C. G. A. 649  
 Pittman, Roland 861  
 Platzek, J. 466  
 Pletneva, Ekaterina 508  
 Plummer, Carrene 592  
 Pogni, Rebecca 798  
 Pondaven, Annig 426, 799  
 Pong, Richard G.S. 489, 680  
 Poriel, Cyril 491  
 Potter, William R. 463, 671  
 Poucková, Pavla 735  
 Poulos, Thomas L. 374, 779  
 Prato, Maurizio 574  
 Pratt, Derek A. 504  
 Prodi, A. 532, 698  
 Proni, Gloria 347  
 Pryce, M. T. 800, 807  
 Purrello, Roberto 467  
 Pushkarev, Victor E. 572, 801, 914

## Q

Qiu, Yan 839, 886  
 Quinn, Melissa J. 898  
 Quintiliani, Maurizio 873

## R

Radford, Robert J. 749  
 Ramdhanie, Bobby 662, 909  
 Ramirez, R. 724  
 Ramírez-Rosales, Daniel 804  
 Rancan, Fiorenza 472, 689  
 Rath, Harapriya 358, 802, 822  
 Rault-Berthelot, Joëlle 491  
 Ravikanth, M. 468, 586, 673  
 Rebane, Aleksander 642  
 Rebelo, Susana L. H. 520  
 Reek, Joost N.H. 361  
 Rein, Régis 803  
 Rella, Roberto 548  
 Ren, Lei 355  
 Ren, Qi-Zhi 475, 513  
 Renner, M. W. 373  
 Repina, Natalya V. 727  
 Rey, Oscar 821  
 Reyes-Ortega, Yasmi 804  
 Ribeiro, Marcela G. 601  
 Ribó, Josep M. 469, 635  
 Ricchelli, Fernanda 470  
 Ricciardi, Giampaolo 341,  
 372, 474, 574, 805, 806  
 Rice, William 394  
 Richard, Philippe 614  
 Richeter, Sébastien 814, 815

Rischka, Klaus 451  
 Rittenhouse-Olson, Kate 913  
 Rivarola, Viviana 600  
 Rizzoli, Corrado 372, 526  
 Roales, Paloma 873  
 Roberge, Michel 443  
 Robert, Anne 471  
 Roberts, Sue A. 450, 592  
 Robinson, B. C. 373  
 Rochford, J. 800, 807  
 Röder, B. 472, 751, 860  
 Rodger, Kimberly 829  
 Rodgers, Michael A. J. 805  
 Rodriguez, L. A. Garza 724  
 Rodriguez, Montserrat 471  
 Rodriguez, Myriam E. 600  
 Rodríguez-Morgade, M. Salomé  
 473, 707, 808  
 Rodríguez-Redondo, Jose-Lorenzo  
 652  
 Roeder, Beate 689  
 Rogers, Joy E. 809  
 Romeo, Andrea 547, 623, 624,  
 810, 811  
 Roncucci, Gabrio 559  
 Rooney, A. D. 800, 807  
 Rosa, Angela 341, 474, 805  
 Rosa, Ieda L. V. 812  
 Rose, Eric 475, 513  
 Rosolen, José M. 697  
 Roth, Arne 479, 693  
 Rowan, Alan E. 331, 458, 703,  
 745, 863  
 Roy, Ranadhir 486  
 Rozniatrovski, Vladimir 813  
 Rubin, Bobbi 813  
 Rubio, Noemí 821  
 Ruiz, Anna 451  
 Ruppert, Romain 560, 713,  
 814, 815  
 Russell, Brandy S. 436  
 Ruzié, Christian 613  
 Ryan, Michael D. 816  
 Ryeng, Hege 529  
 Ryppa, Claudia 817  
 Scheidt, W. Robert 693

## S

Sáez Díaz, R.I. 818  
 Safo, Martin K. 479  
 Sage, J. T. 561  
 Sagun, Evgeny I. 907, 908  
 Saigo, Kazuhiko 824  
 Saillard, Jean-Yves 426  
 Sakai, Masaki 563  
 Sakai, Takanori 552  
 Sakamoto, Keiichi 819

- Sakharov, Sergey G. 646  
 Saltsman, Irena 387, 820  
 Sambongi, Yoshihiro 581  
 Samlan, Hussein 370  
 Sánchez-García, David 821  
 Sanders, Jeremy K. M. 664, 872  
 Sandman, Daniel J. 476  
 Sankar, Jeyaraman 358, 802, 822  
 Sankar, M. 517  
 Santander, Patricio J. 536  
 Santoni, Elisa 492  
 Santos, Ádamo C. M. A. dos 599  
 Sariisik, Safiye 777  
 Sasikumar, Vivek 829  
 Sastre-Santos, Ángela 652  
 Sato, Hideaki 395, 775, 823  
 Sato, Hiroshi 824  
 Sato, Naoki 477  
 Sato, Tomoo 692  
 Satterlee, James D. 562, 825, 826  
 Savoie, Huguette 351, 617  
 Scandola, F. 532, 698  
 Scarpa, A. 827, 828  
 Scheer, Hugo 478  
 Scheidt, W. Robert 479, 561, 837  
 Scherz, Avigdor 478  
 Schlettwein, Derck 480, 770  
 Schmidt, Wolfgang 451  
 Schmitt-Willich, H. 466  
 Schore, Neal E. 487  
 Schuitmaker, J. J. 883  
 Schulz, Charles E. 479, 693  
 Schulz, Steffi 478  
 Schuster, David I. 481, 747, 877  
 Sciortino, Maria Teresa 764  
 Scolaro, Luigi Monsù 623, 624, 764, 765, 810, 811  
 Scott, A. Lan 536  
 Scott, Michael J. 482  
 Segawa, Hiroshi 563  
 Seidel, Daniel 577, 769  
 Selmeczi, Katalin 471  
 Semeykin, Alexander S. 587, 608, 731, 908  
 Semioshkin, A. 874  
 Sen, Zafer 672, 675  
 Senge, Mathias O. 472, 483, 817  
 Seotsanyana-Mokhosi, I. 784  
 Sergeeva, Natalia 817  
 Serra, V. V. 649  
 Serth-Guzzo, Judith A. 479  
 Sessler, Jonathan L. 437, 484, 577, 639, 712, 769, 793, 808, 813, 867, 889  
 Setsune, Jun-ichiro 485, 690, 855, 857, 865  
 Sevic-Muraca, Eva M. 434, 486  
 Shachter, Amy M. 606, 829  
 Shao, Jianguo 514, 643, 787, 830, 909  
 Shehee, M. 661  
 Sheikh, Mayra 385  
 Sheinin, Vladimir B. 846  
 Shelnutt, John A. 445, 487, 578, 638, 679, 839, 886  
 Shen, Jing 830  
 Shi, Baolu 351  
 Shi, Martin Scobiec Baolu 351  
 Shibata, Reiko 831  
 Shikova, Tatiana G. 588  
 Shim, En-Kyung 429  
 Shim, Young Key 564  
 Shima, Sumi 355  
 Shimada, Tetsuya 533  
 Shimakoshi, Hisashi 397, 596  
 Shimazaki, Yuichi 455  
 Shimizu, Soji 832, 833  
 Shimizu, Yusuke 461, 834  
 Shin, Ji-Young 772  
 Shinkai, Seiji 569  
 Shinmori, Hideyuki 824  
 Shinokubo, Hiroshi 687  
 Shirai, Hirofusa 488  
 Shirk, James S. 489, 680  
 Shiro, Yoshitsugu 565  
 Shirota, Yasuhiko 490  
 Shishkanova, Tatiana V. 424  
 Shoji, Yoshiaki 835  
 Shukhto, Olga V. 609  
 Shulga, Alexander M. 583, 907, 908  
 Shulishov, Eugeniy V. 801  
 Sibrian-Vazquez, Martha 836  
 Siebert, Walter 353  
 Silva, Ana M. G. 571, 782, 868  
 Silva, Artur M. S. 520, 554, 571, 649, 782, 868, 869  
 Silva, E. F. Cruze 649  
 Silva, Eduarda M. P. 650, 878  
 Silvernail, Nathan 837  
 Simkhovich, Liliya 387  
 Simões, Mário M. Q. 520  
 Simonenko, K. 472  
 Simonis, Uschi 566, 575, 796  
 Simonneaux, Gerard 491  
 Simpson, M. Cather 567  
 Singh, Anup K. 839  
 Sinha, Arun K. 439  
 Sintic, Paul J. 787  
 Sirisawad, Mint 437  
 Skrobot, Fabiana C. 812  
 Slagle, Jonathan E. 809  
 Sly, Joseph 361, 458, 703  
 Smijs, G. M. T. 883  
 Smirnov, Sergei 451  
 Smith, Karen 351, 558, 617  
 Smith, Kevin M. 369, 631, 683, 715, 738, 743, 752, 753, 758, 778  
 Smith, Phillip M. 363, 838  
 Smulevich, Giulietta 492  
 Snow, Arthur W. 489, 680  
 Sobsey, M. D. 661  
 Sokolova, Tatyana N. 755  
 Solban, Nicolas 394  
 Solladié, Nathalie 493, 803, 885  
 Soncin, Marina 870  
 Song, Yujiang 487, 839  
 Sook, Brian R. 641  
 Sooksimuang, Thanasat 439, 744  
 Sorasaene, Karn 385  
 Soriano, Erika 829  
 Sortino, Salvatore 765, 880  
 Sosa-Sanchez, José L. 433  
 Spangler, Charles W. 642  
 Spiess, Bruce 861  
 Squier, Angela H. 416  
 Srinivasan, Alagar 378, 705  
 Steene, Erik 579, 840, 853  
 Stefanelli, Manuela 553  
 Stefaniak, Marta 677  
 Stelten, Johannes 618  
 Stepanenko, Yurii 642  
 Stepanian, Stepan 450  
 Sterenberg, Alex 370  
 Stern, Christine 841  
 Stevens, Julie 375  
 Stillman, Martin J. 494, 545, 759, 842  
 Stocks, Danial 843  
 Stone, Kari Lunder 844  
 Strassert, Cristian A. 600  
 Sturhahn, W. 561  
 Stute, Silvio 845  
 Stuzhin, Pavel A. 495, 710, 711, 727, 846, 847  
 Stuzhina, Ol'ga V. 847  
 Su, Weijie 848, 849  
 Suarez, Diana 381  
 Subramanian, L. R. 490  
 Subramanian, S. 792  
 Suemori, Yoshiharu 704, 734  
 Sugimori, Tamotsu 415  
 Sugimoto, Manabu 722  
 Sugiura, Ken-ichi 496, 722, 790  
 Sülzle, D. 466  
 Sumi, Hitoshi 595  
 Sun, Jian-Cheng 694  
 Sun, Shih-Sheng 403  
 Sun, Wenfang 568  
 Suquet, Christine M. 562, 825, 826

Suslick, Kenneth S. 497, 648, 910  
 Suslova, Elena E. 755  
 Suzuki, Hiroshi 858  
 Suzuki, Masaaki 850  
 Suzuki, Yosuke 340, 655, 851  
 Svadberg, Anders 852  
 Svendsen, Kristian 852, 853  
 Swamy, Jyothi 637  
 Swarts, Jannie 852  
 Synytsya, Alla 735  
 Szydlo, Florence 513

## T

Tabak, Marcel 854  
 Tabard, Alain 670  
 Tabata, Masaaki 498, 678  
 Tachibana, Hiroshi 533  
 Tachiiri, Naoki 581  
 Tada, Akinori 582  
 Tagliatesta, Pietro 499  
 Tait, C. Drew 769  
 Tajima, Hiroyuki 407  
 Takagi, Shinsuke 533  
 Takahashi, Masashi 785  
 Takahashi, Satoshi 565  
 Takao, Yuko 855  
 Takayama, Shin-ichi Joseph 581  
 Takeda, Masuo 785  
 Takeda, Tokuji 855  
 Takeuchi, Masayuki 569  
 Takeuchi, Yumi 856  
 Tamiaki, Hitoshi 500, 831  
 Tanabe, Aya 857  
 Tanaka, Hiroyuki 722  
 Tanaka, Katsunori 347  
 Tanaka, Yasuo 902  
 Tanaka, Yasutaka 858  
 Tangen, Espen 529, 659, 852, 859  
 Tani, Fumito 455  
 Tanikawa, Sachiko 690, 855  
 Tannert, S. 751, 860  
 Tasaltın, Cihat 672, 675  
 Tashiro, Kentaro 570, 824, 835  
 Tattershall, Carin 444  
 Taylor, Peter N. 642  
 Taylor, Peter R. 501  
 Teixidó, Jordi 821  
 Terazono, Yuichi 593  
 Turner, James 861  
 Terui, Norifumi 581  
 Thai, Ngee Ai 862  
 Thiemann, Patti 437  
 Thordarson, Pall 843, 863, 888  
 Tiba, Hakam 861  
 Tidwell, Cynthia P. 864  
 Tiede, David W. 403  
 Tikhomirov, Sergei A. 907

Tipugina 756  
 Titov, Valeri A. 588  
 Tkachenko, Elena 387  
 Tkachenko, Nikolai V. 430, 787  
 Toda, Masayuki 865  
 Toganoh, Motoki 705  
 Tokmanov, A. 616  
 Tokunaga, Mami 397  
 Tolbin, Alexander Yu. 572, 866  
 Toldina, Olga V. 609  
 Tomat, Elisa 484, 867  
 Tomé, Augusto C. 554, 571, 649, 650, 782, 868, 869, 870, 878, 879  
 Tomé, João P. C. 650, 869, 870, 877, 878, 879  
 Tomilov, Yuriy V. 801  
 Tomilova, Larisa G. 534, 572, 716, 717, 718, 866, 914  
 Tominaga, Kazuyuki 871  
 Tong, Lok H 872  
 Torres, Luciana 861  
 Torres, Tomás 322, 630, 707, 808, 869, 873  
 Torres-Filho, Ivo 861  
 Tosha, Takehiko 779  
 Tracy, Diana 796  
 Tsai, Hui-Hsu 567  
 Tsang, Po-Ting 456  
 Tsaryova, Olga 874  
 Tsentalovitch, Mihail Yu. 534  
 Tsiprovskiy, Alexander G. 668  
 Tsivadze, Aslan Yu. 610, 611, 646, 666, 762  
 Tsuchiya, Youichi 404  
 Tsutsumi, Kiyohiko 477  
 Tsuzuki, Toshimitsu 490  
 Turano, Paola 502  
 Turner, Boaz 370  
 Turowska-Tyrk, Ilona 479

## U

Ueno, Takafumi 506  
 Ugur, Nevin 672, 675  
 Ulaganathan, Swarna 875  
 Un, Sun 708  
 Unno, Masaki 405  
 Uno, Hidemitsu 461, 573, 834, 871  
 Uno, Tadayuki 503  
 Uslu, Rabia Zeynep 876  
 Ustynyuk, Yu. A. 793

## V

Vagin, Sergej 524  
 Vail, Sean A. 481, 877  
 Valdeira, Maria L. 878, 879  
 Valente, Filipa 638  
 Valík, Martin 424  
 Valkova, L. 881  
 Valli, Ludovico 574, 589, 806, 880, 881  
 Van Caemelbecke, Eric 882  
 van der Donk, Wilfred A. 504  
 Van Der Haas, H. N. S. 883  
 Van Gammeren, Adriaan 530  
 van Lier, Johan E. 505  
 Vasapollo, Giuseppe 767, 768  
 Vázquez, Purificación 873  
 Vazquez-Duhalt, Rafael 798  
 Veauthier, Jacqueline M. 867  
 Vega, Y. I. Avila 724  
 Velayutham, M. 792  
 Velonia, Kelly 863  
 Venanzi, Mariano 548  
 Verchère-Béaur, C. 522  
 Vermathen, Martina 566, 575  
 Vermeiren, Christie 842  
 Vershinina, Irina A. 588  
 Vetter, Stefan W. 382  
 Vicente, M. Graça H. 332, 574, 631, 644, 667, 682, 683, 739, 743, 752, 753, 758, 789, 836  
 Villari, Valentina 623, 764  
 Vinhado, Fábio S. 697  
 Vinogradov, Sergei A. 576, 619, 653, 884  
 Vittar, Natalia B. Rumie 600  
 Vodkin, Irina 829  
 Volka, Karel 735  
 Vorozhtsov, Georgy N. 413  
 Vottero, Eduardo 443  
 Vuorinen, Tommi 430  
 Vzorov, Andrei N. 525

## W

Wada, Kenji 897  
 Wada, Shusaku 415  
 Walker, F. Ann 323, 450, 906  
 Walsh, Christopher J. 439  
 Walther, Mathieu E. 885  
 Waluk, Jacek 577  
 Wang, Jin-Jun 564  
 Wang, Ningyan 436  
 Wang, Sheena Hailin 662  
 Wang, Wei 434  
 Wang, Xiaotang 436  
 Wang, Yen-Ku 629  
 Wang, Zhong 437, 889

Wang, Zhongchun 578, 886  
 Ward, Kevin 861  
 Warriar, Ajaya Kumar S. 439  
 Wasbotten, Ingar H. 579, 853  
 Watanabe, Masaki 819  
 Watanabe, Yoshihito 506  
 Weaver, Jeremy J. 385, 887  
 Webb, James E. A. 888  
 Wedel, Michael 451  
 Wei, Ji 524  
 Wei, Wen-hao 437, 889  
 Wei, Zhongcheng 816  
 Weichsel, Andrzej 450, 592, 905  
 Weinmann, H. J. 466  
 Weiss, Andre 353  
 Weiss, Raymond 327, 670  
 Weizhe, Chen 524  
 Wharton, D. C. 561  
 Wicks, Matthew N. 890, 891  
 Wieghardt, Karl 507  
 Wiehe, A. 472  
 Williams, Howard J. 536  
 Wilson, Craig J. 892  
 Wilson, Michael A. 416, 893  
 Wilson, Stephen R. 912  
 Winkler, Jay R. 508  
 Winters, Mikael 894  
 Wöhrle, Dieter 328, 770, 874  
 Woo, L. Keith 580  
 Woon, David E. 393  
 Wu, Raymond 566  
 Wu, Yi-qun 627  
 Wu, Yingguang 678  
 Würthener, F. 698

Wyllie, Graeme R. A. 479, 561  
 Wypych, Fernando 780

## X

Xue, Jin-ping 895

## Y

Yam, Fei 896  
 Yamada, Hiroko N. 573  
 Yamamoto, Yasuhiko 581  
 Yamamoto, Yohsuke 509  
 Yamane, Osamu 496  
 Yamashita, Keiji 734  
 Yamashita, Masahiro 496, 722, 790  
 Yamashita, Yoshinori 858  
 Yamauchi, Takae 897  
 Yamazaki, Iwao 692  
 Yang, G. Y. 524  
 Yap, Amy 829  
 Yap, Benjamin C. M. 898  
 Ye, Ting-xiu 895  
 Yenilmez, H. Yasemin 899  
 Yeung, Lam-Lung 896  
 Yilmaz, Fatma 590  
 Yoon, Zin Seok 900, 901  
 Yoshida, Hiroyuki 477  
 Yoshida, Tadashi 427  
 Yoshida, Takafumi 485, 865  
 Yoshikawa, Hirofumi 340, 655, 851  
 Yoshimoto, Soichiro 582  
 Yoshimura, Hidenori 594  
 Yoshioka, Shiro 594  
 You, Youngjae 365  
 Youfu, Katsuyuki 723, 902

Yu, Marina 756  
 Yüksel, Fatma 903

## Z

Zabri, Hervé 556  
 Zagal, José H. 510  
 Zajceva, Svetlana V. 731  
 Zamorano-Ulloa, Rafael 804  
 Zandler, Melvin E. 363, 656, 838  
 Zangrando, E. 532  
 Zangrando, Ennio 335  
 Zareba, Adelajda A. 905, 906  
 Záruba, Kamil 424  
 Zdanovich, Sergey A. 731  
 Zefirov, Nikolai S. 572, 866  
 Zelenov, Alexey A. 732  
 Zeng, W. 561  
 Zenkevich, Eduard I. 583, 907, 908  
 Zgierski, M. Z. 561  
 Zhan, Riqiang 909  
 Zhang, Chen 910  
 Zhang, Guo-Cai 694  
 Zhang, Hongqiang 816  
 Zhang, Rui 911  
 Zhao, Hui 912  
 Zhao, Xuan 436  
 Zheng, Xiang 463, 913  
 Zhou, Zhiguo 912  
 Zhukov, Igor V. 572, 801, 914  
 Ziegler, Christopher J. 584, 685  
 Zilbermann, Israel 574  
 Zimmerman, Steven C. 511  
 Zou, Xiang 354  
 Zrig, Samia 513



# ICPP-3 Program Book



## Participants Arranged by Country





**Argentina**

Awruch Josefina  
Bari Sara E.  
Niemevz Fernando

**Armenia**

Kurtikyan Tigran S.

**Australia**

Absalom Mark A.  
Arnold Dennis P.  
Blake Iain M.  
Brotherhood Peter R.  
Crossley Maxwell J.  
Khoury Tony  
McDonald James A.  
Stocks Danial  
Thordarson Pall  
Vonwiller Simone  
Webb James E. A.  
Yap Benjamin C.M.

**Austria**

Kräutler Bernhard  
Meissner Dieter  
Sintic Paul

**Belarus**

Zenkevich Eduard

**Brazil**

Assis Marilda das Dore  
Azzellini Gianluca C.  
Gaffo Luciana  
Iamamoto Yassuko  
Nakagaki Shirley  
Rosa Ieda L. V.  
Tabak Marcel

**Canada**

Dolphin David  
Lever A. Barry P.  
Levy Julia G.  
Leznoff Clifford C.  
Mack John  
Mauk A. Grant  
Shin Ji-Young  
Stillman Martin J.  
van Lier Johan E.

**Chile**

Zagal José H.

**Czech Republic**

Král Vladimír

**Finland**

Lemmetyinen Helge

**France**

Andrioletti Bruno  
Barbe Jean-Michel  
Boitrel Bernard  
Bouvet Marcel  
Brault Daniel  
Bulach Véronique  
Callot Henry J.  
Gros Claude P.  
Guilard Roger  
Hosseini Mir Wais  
Ivancich Anabella  
Jeandon Christophe  
L'Her Maurice  
Marchon Jean-Claude  
Odobel Fabrice  
Pondaven Annig  
Rein Regis  
Robert Anne  
Rose Eric  
Ruppert Romain  
Simonneaux Gérard  
Solladie Nathalie  
Stern Christine  
Tabard Alain  
Walther Mathieu E.  
Weiss Raymond E.

**Germany**

Balaban Teodor Silviu  
Balbinot Domenico  
Breiling Martina  
Bröring Martin  
Buchler Johann Walter  
Dini Danilo  
Eigler Siegfried  
Hanack Michael  
Hanke Daniela  
Hartnagel Uwe  
Helmreich Matthias  
Jux Norbert  
Knör Günther  
Leupold Stephan  
Litwinski Christian  
Michaelis Esther  
Montforts Franz-Peter  
Platzek Johannes  
Röder Beate  
Ryppa Claudia  
Saez Diaz R. I.  
Scheer Hugo

Schlettwein Derck  
Senge Mathias O.  
Stute Silvio  
Tannert Sebastian  
Tsaryova Olga  
Wiegardt Karl E.  
Wöhrle Dieter

**Greece**

Coutsoulelos Athanassios G.

**Hong Kong**

Chang Chi K.  
Che Chi-Ming  
Lo Pui-Chi  
Ng Dennis K. P.  
Yam Fei

**India**

Bhyrappa Puttaiah  
Chandrashekar Tavarekere K.  
Gupta Iti  
Rath Harapriya  
Ravikanth M.  
Sankar Jeyaraman

**Ireland**

Pryce Mary T.  
Rochford Jonathan J.

**Israel**

Ehrenberg Benjamin  
Goldberg Israel  
Golubkov Galina  
Gross Zeev  
Saltsman Irena

**Italy**

Agostiano Angela  
Alessio Enzo  
Bellusci Domenica  
Bertini Ivano  
Castriciano Maria Angela  
Di Natale Corrado  
Donzello Maria Pia  
Ercolani Claudio  
Flamigni Lucia  
Iengo Elisabetta  
Jori Giulio  
Kohnke Franz Heinrich  
Mazzaglia Antonino  
Mele Giuseppe  
Monsu-Scolaro Luigi  
Monti Donato  
Nardis Sara  
Paolesse Roberto

Pogni Rebecca  
 Purrello Roberto  
 Ricchelli Fernanda  
 Ricciardi Giampaolo  
 Romeo Andrea  
 Roncucci Gabrio  
 Rosa Angela  
 Scarpa Antonio  
 Smulevich Giulietta  
 Tagliatesta Pietro  
 Turano Paola  
 Valli Ludovico  
 Velders Aldo Hendrikus

#### Japan

Aida Takuzo  
 Amao Yutaka  
 Amasaki Ichiro  
 Aono Shigetoshi  
 Aratani Naoki  
 Aritome Isao  
 Awaga Kunio  
 Borovkov Victor V  
 Engel Michael Klaus  
 Fujii Hiroshi  
 Fujimori Masato  
 Fukuzumi Shunichi  
 Furuta Hiroyuki  
 Furuya Fumio  
 Habib Ahsan  
 Hasobe Taku  
 Hata Katsuyuki  
 Hayashi Takashi  
 Higuchi Tsunehiko  
 Hirose Yuka  
 Hisaeda Yoshio  
 Homma Shigetsugu  
 Hosomizu Kohei  
 Ikeda Atsushi  
 Ikeda Chusaku  
 Ikeda-Saito Masao  
 Ikeue Takahisa  
 Ikezaki Akira  
 Imahori Hiroshi  
 Inabe Tamotsu  
 Inoue Haruo  
 Isago Hiroaki  
 Ishigure Syuichi  
 Ishikawa Naoto  
 Ishizuka Tomoya  
 Kano Koji  
 Kasuga Kuninobu  
 Kato Aiko  
 Kawabata Shigeaki

Kimura Mutsumi  
 Kishi Takashi  
 Kobayashi Nagao  
 Kobuke Yoshiaki  
 Kojima Takahiko  
 Kondo Masaharu  
 Konishi Katsuaki  
 Kuroda Yasuhisa  
 Kurotobi Kei  
 Maeda Shuuichi  
 Matsuo Takashi  
 Mizuguchi Jin  
 Mizutani Tadashi  
 Mori Shigeaki  
 Morimoto Tatsuki  
 Morishima Isao  
 Muraoka Takahiro  
 Murata Dai  
 Nagata Toshi  
 Nakamura Mikio  
 Nakamura Yasuyuki  
 Nango Mamoru  
 Naruta Yoshinori  
 Ogoshi Hisanobu  
 Ohgo Yoshiki  
 Ohkubo Kei  
 Okamoto Ken  
 Okura Ichiro  
 Ono Noboru  
 Osuka Atsuhiko  
 Oyama Tomomi  
 Sakamoto Keiichi  
 Sato Hideaki  
 Sato Hiroshi  
 Sato Naoki  
 Segawa Hiroshi  
 Setsune Jun-ichiro  
 Shibata Reiko  
 Shimizu Soji  
 Shimizu Yusuke  
 Shirai Hirofusa  
 Shiro Yoshitsugu  
 Shirota Yasuhiko  
 Shoji Yoshiaki  
 Sugiura Ken-ichi  
 Suzuki Masaaki  
 Suzuki Yosuke  
 Tabata Masaaki  
 Takao Yuko  
 Takeuchi Masayuki  
 Takeuchi Yumi  
 Tamiaki Hitoshi  
 Tanabe Aya  
 Tanaka Yasutaka

Tashiro Kentaro  
 Toda Masayuki  
 Tominaga Kazuyuki  
 Uno Hidemitsu  
 Uno Tadayuki  
 Watanabe Masaki  
 Watanabe Tetsuya  
 Watanabe Yoshihito  
 Yamamoto Yasuhiko  
 Yamamoto Yohsuke  
 Yamasaki Yasuhiro  
 Yamauchi Takae  
 Yoshimoto Soichiro  
 Youfu Katsuyuki

#### Korea

Jeong Dae Hong  
 Kim Dongho  
 Kim Jeong-Ho  
 Lee Chang-Hee  
 Nam Wonwoo  
 Park Dong-Soo  
 Shim Young Key  
 Yoon Zin Seok

#### Mexico

Kharisov Boris  
 Ramirez-Rosales Daniel  
 Reyes-Ortega Yasmi

#### Netherlands

Baerends Evert Jan  
 Hulsbergen Frans B.  
 Lensen Marga  
 Nolte Roeland J.M.  
 Rowan Alan E.  
 van der Haas Richard  
 Van Nostrum Cornelus

#### New Zealand

Brothers Penny J.

#### Norway

Ghosh Abhik  
 Hansen Terkel  
 Svadberg Anders  
 Svendsen Kristian  
 Tangen Espen  
 Wasbotten Ingar H.

#### P. R. China

Chen Nai-sheng  
 Huang Jian-Dong  
 Jiang Jianzhuang  
 Xue Jin-ping



**Poland**

Gryko Daniel T.  
 Habbas Jan  
 Kubiak Ryszard  
 Latos-Grazynski Lechoslaw  
 Waluk Jacek

**Portugal**

Cavaleiro José A. S.  
 Di Paolo Roberto E.  
 Faustino Maria Amparo  
 Neves Maria da Graça P. M. S.  
 Tomé Augusto C.  
 Tomé João P. C.  
 Valdeira Maria L.

**Russia**

Ageeva Tatiana A.  
 Berezin Dmitry B.  
 Birin Kirill P.  
 Biryukova Irina V.  
 Borisenkova Svetlana A.  
 Fedorova Tatyana M.  
 Gorbunova Yulia G.  
 Grin Michael A.  
 Islyaikin Mikhail K.  
 Ivanov Alexey V.  
 Ivanova Svetlana S.  
 Kalashnikova Irina P.  
 Kaliya Oleg L.  
 Klyueva Marija E.  
 Koifman Oscar I.  
 Lomova Tatyana N.  
 Luk'yanets Evgeny  
 Makarova Elena A.  
 Martynov Alexander G.  
 Mironov Andrey F.  
 Pushkarev Victor E.  
 Stuzhin Pavel A.  
 Tolbin Alexander Y.  
 Tomilova Larisa G.  
 Tsivadze Aslan Y.  
 Zhukov Igor V.

**South Africa**

Maree M. David  
 Munro Orde Q.  
 Nyokong Tebello

**Spain**

Claessens Christian G.  
 Crusats Joaquim  
 Fernández-Lázaro Fernando  
 Ribo Josep M.  
 Rodríguez-Morgade M. Salomé

Sastre-Santos Angela  
 Torres Tomás

**Sweden**

Albinsson Bo  
 Eng Mattias  
 Pettersson Karin  
 Winters Mikael U.

**Switzerland**

Decurtins Silvio  
 Gossauer Albert Richard  
 Haas Marco  
 Loosli Claudia  
 Vermathen Martina

**Taiwan**

Cheng Ru-jen  
 Ching Wei-Min  
 Chuang Chuan-Hung  
 Hung Chen-Hsiung  
 Lin Ching-Yao

**Turkey**

Ahsen Vefa  
 Arslanoglu Yasin  
 Bekaroglu Ozer  
 Ceyhan Tanju  
 Dinçer Hatice A.  
 Gumus Gulay  
 Gurek Ayse Gül  
 Gurol Ilke  
 Kalkan Ayfer  
 Kandaz Mehmet  
 Musluoglu Emel  
 Uslu Rabia Zeynep  
 Yenilmez Hacer Y.  
 Yüksel Fatma

**United Kingdom**

Anderson Harry L.  
 Barrett Anthony G. M.  
 Battersby Alan R.  
 Bell Steven E. J.  
 Boyle Ross W.  
 Collins Hazel Anne  
 Cook Michael J.  
 Ferguson Stuart J.  
 Frampton Michael  
 Gale Philip A.  
 Golding Bernard T.  
 Goncalves Diana P.  
 Isare Benjamin  
 Keely Brendan John  
 McKeown Neil B.  
 Murphy Karen A.

Patel Prakash  
 Pesa Nela  
 Taylor Peter  
 Tong Lok H.  
 Wicks Matthew N.  
 Wilson Craig J.  
 Wilson Michael A.

**USA**

Amoia Angela M.  
 Andreasson Joakim  
 Armstrong Neal R.  
 Balch Alan L.  
 Banerjee Ruma  
 Barnett Jon J.  
 Behan Rachel K.  
 Berova Nina D.  
 Bommer Jerry  
 Boulatov Roman  
 Brinas Raymond P.  
 Brown Kenneth L.  
 Brückner Christian  
 Burrell Anthony  
 Cahill Paul  
 Chance Britton  
 Clark J. Caleb  
 Collins James  
 Cramer Stephen P.  
 Czader Arkadiusz  
 Czernuszewicz Roman S.  
 D'Souza Francis  
 D'Souza Valerian T.  
 Dawson John H.  
 Detty Michael R.  
 Didier Amandine  
 DiMagno Stephen G.  
 Dixon Dabney W.  
 Drain Charles Michael  
 Drobizhev Mikhail  
 Durfee William S.  
 E Wenbo  
 Easson Michael W.  
 Erdem Sultan  
 Fajer Jack  
 Fang Ming  
 Farmer Patrick J.  
 Finikova Olga S.  
 Fremond Laurent  
 Friesner Richard A.  
 Gadde Suresh  
 Garcia Rachel  
 Garcia-Frutos Eva M.  
 Ghiladi Reza A.  
 Ghosh Brahma

Gold Avram  
 Goldberg David P.  
 Goodin David B.  
 Gorun Sergiu M.  
 Gossett Kristi  
 Gottumukkala Vijay  
 Gouterman Martin  
 Gray Harry B.  
 Green Michael T.  
 Groves John T.  
 Gryshuk Amy L.  
 Guldi Dirk M.  
 Gust Devens  
 Haddad Raid E.  
 Hakspiel Shelly J.  
 Hao Erhong  
 Hargus Jodie A.  
 Harris Danni L.  
 Harvey John D.  
 Hasan Tayyaba  
 Hodgkiss Justin  
 Hoffman Brian M.  
 Holten Dewey  
 Hu Chuanjiang  
 Huggins Michael T.  
 Huo Qun  
 Hupp Joseph T.  
 Jayawickramarajah Janarthanan  
 Jiao Lijuan  
 Kadish Karl M.  
 Kajiwaru Yasuhiro  
 Karlin Kenneth D.  
 Kessel David  
 Khalil Gamal E.  
 Kincaid James  
 Krivokapic Alexander  
 Kubicko Mike  
 Kumar Murugaeson Ravi  
 La Mar Gerd N.  
 Lau Kimberly S.  
 Laurent Boyd A.  
 Lee Chi-Hang  
 Lee Sang Hee  
 Li Chun  
 Li Ke  
 Lightner David  
 Lim Mark David  
 Lindsey Jonathan S.  
 Liu Wei  
 Lu Jianming  
 Lu Yi  
 Luguya Raymond J.  
 Magda Darren  
 Malinski Tadeusz

Marletta Michael A.  
 Marzilli Luigi G.  
 Medforth Craig J.  
 Melfi Patricia J.  
 Montfort William R.  
 Mudyiwa Mercy  
 Mwakwari Celinah S.  
 Nagano Shingo  
 Nocera Daniel G.  
 Ongayi Owendi  
 Ortiz De Montellano Paul R.  
 Ou Zhongping  
 Pallenberg Alexander J.  
 Pandey Ravindra K.  
 Pandian Ramasamy P.  
 Pantos Gheorghe Dan  
 Pasternack Robert F.  
 Peritore Carina S.  
 Rogers Joy E.  
 Rubin Bobbi L.  
 Ryan Michael D.  
 Sage J. Timothy  
 Salzameda Nicholas  
 Sanchez-Garcia David  
 Sandman Daniel J.  
 Satterlee James D.  
 Scheidt W. Robert  
 Schuster David I.  
 Scott Michael Joel  
 Sessler Jonathan L.  
 Sevick-muraca Eva Marie  
 Shachter Amy M.  
 Shao Jianguo  
 Shelnutt John A.  
 Shen Jing  
 Shirk James S.  
 Sibrian-Vazquez Martha  
 Silvernail Nathan J.  
 Simonis Uschi  
 Simpson M. Cather  
 Smith Kevin M.  
 Smith Paul D.  
 Smith Phillip M.  
 Song Yujiang  
 Steene Erik  
 Stone Kari Lunder  
 Stork Jay  
 Su Weijie  
 Sun Wenfang  
 Suslick Kenneth S.  
 Turner James  
 Thai Ngee Ai  
 Tidwell Cynthia P.  
 Tomat Elisa

Torres Eduardo  
 Ulaganathan Swarna  
 Vail Sean A.  
 van Caemelbecke Eric J.  
 van der Donk Wilfred A.  
 Vicente M. Graça H.  
 Vinogradov Sergei A.  
 Walker F. Ann  
 Wang Zhongchun  
 Weaver Jeremy J.  
 Wei Wen-hao  
 Winkler Jay R.  
 Woo Keith  
 Wray Bob  
 Zareba Adelajda A.  
 Zhan Riqiang  
 Zhang Chen  
 Zhang Rui  
 Zhao Hui  
 Zheng Xiang  
 Zhou Lanlan  
 Ziegler Christopher J.  
 Zimmerman Steven C.

# JPP Volume 8, Numbers 1, 2, 3

## Dedication to Professor Hisanobu Ogoshi on the occasion of his 70th birthday

Guest edited by Takashi Hayashi

Schiff-base porphyrin and expanded porphyrin analogues

Wyeth B. Callaway, Jacqueline M. Veauthier and Jonathan L. Sessler\*

Porphyrins with fused exocyclic rings

M. Graça H. Vicente and Kevin M. Smith\*

Contributions to the chemistry of anionic water-soluble tetraarylporphyrins and their metal complexes

Johann W. Buchler\*

N-confused porphyrins as new scaffolds for supramolecular architecture

Hiromitsu Maedaa and Hiroyuki Furuta\*

Gallium(III) corroles

Jeremy J. Weaver, Karn Sorasaneee, Mayra Sheikh, Ruth Goldschmidt, Elena Tkachenko, Zeev Gross and Harry B. Gray\*

Synthesis of one-dimensional bis-porphyrinic compounds with a transition metal complex as bridging unit

Jean-Claude Chambron, Jean-Paul Collin, Isabelle Dixon, Valérie Heitz, Xavier J. Salom-Roig and Jean-Pierre Sauvage\*

Palladium chemistry in the recent porphyrin research

Jun-ichiro Setsune\*

Hydrocarbon C-H bond activation by rhodium porphyrins

Weihong Cui and Bradford B. Wayland\*

meso-aryl-8-pyrrolic position interactions in meso-tetraarylporphyrins. Flat arylporphyrins and building blocks for oligoporphyrins

Henry J. Callot\*, Romain Ruppert, Christophe Jeandon and Sébastien Richeter

Short- and long-distance porphyrin heterodimers in bulk aqueous solution and nanowells

Jürgen-Hinrich Fuhrhop\*, Tianyu Wang, Sheshanath Bhosale and Sidhanath Bhosale

Host-guest interactions of cyclodextrins and metalloporphyrins: supramolecular building blocks toward artificial heme proteins

Huchen Zhou and John T. Groves\*

Protein surface recognition by porphyrin-based receptors

Lun K. Tsou, Rishi K. Jain and Andrew D. Hamilton\*

Molecular complexes of water-soluble porphyrins

Koji Kano\*

Porphyrin supramolecules by complementary coordination for units constructing photosynthetic systems

Yoshiaki Kobuke

meso-aryl expanded porphyrins: synthesis, structures, and coordination chemistry

Soji Shimizu and Atsuhiko Osuka\*

Recent developments in robust microporous porphyrin solids

Dennis W. Smithenry and Kenneth S. Suslick\*

$\pi$ -Complex formation in electron-transfer reactions of porphyrins

Shunichi Fukuzumi\*, Taku Hasobe, Kei Ohkubo, Maxwell J. Crossley\*, Prashant V. Kamat\* and Hiroshi Imahori\*

$\beta$ -Pyrrole brominated meso-tetraphenylporphyrins: synthesis, spectral and electrochemical properties

Zhongping Oua Janguo Shao, Francis D'Souza\*, Pietro Tagliatesta\* and Karl M. Kadish\*

Spectroscopic studies of peroxo/hydroperoxo derivatives of heme proteins and model compounds

Mohammed Ibrahim and James R. Kincaid\*

Linear tetrapyrroles as functional pigments in chemistry and biology

Tadashi Mizutani\* and Shigeyuki Yagi

Cytochrome c folding/unfolding: a unifying picture

Ivano Bertini\*, Antonio Rosato and Paola Turano

Modeling heme protein active sites with the his93gly cavity mutant of sperm whale myoglobin: complexes with nitrogen-, oxygen- and sulfur-donor proximal ligands

Roshan Perera and John H. Dawson\*

Enhancement of enzymatic activity for myoglobins by modification of heme-propionate side chains

Takashi Hayashi\*, Hideoaki Sato, Takashi Matsuo, Takaaki Matsuda, Yutaka Hifumi and Yoshio Hiseada

Reaction between iron porphyrins and tetrahydropterins

Daniel Mansuy\*, Dephine Mathieu, Pierrette Battioni and Jean-Luc Boucher

Molecular engineering of cytochrome P450 and myoglobin for selective oxygenations

Takafumi Ueno, Takahiro Ohki and Yoshihito Watanabe\*

Coenzyme B12-dependent enzymatic dehydration of 1,2-diols: simple reaction, complex mechanism

Giovanna Speranza, Wolfgang Buckel and Bernard T. Golding\*

Improved routes for the synthesis of face-to-face bismacrocycles in porphyrin and corrole series

Jean-Michel Barbe, Christine Stern, Ewa Pacholska, Enrique Espinosa and Roger Guilard\*

316 pages

Society of  
Porphyrins &  
Pthalocyanines



## Journal of Porphyrins and Pthalocyanines

The official journal of SPP

Volume 8 - Numbers 1, 2 & 3 - Pages 1-316

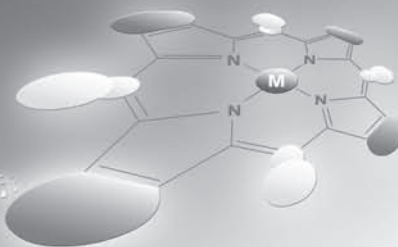
[www.u-bourgogne.fr/jpp/](http://www.u-bourgogne.fr/jpp/)

2004 - ISSN 1088-4246

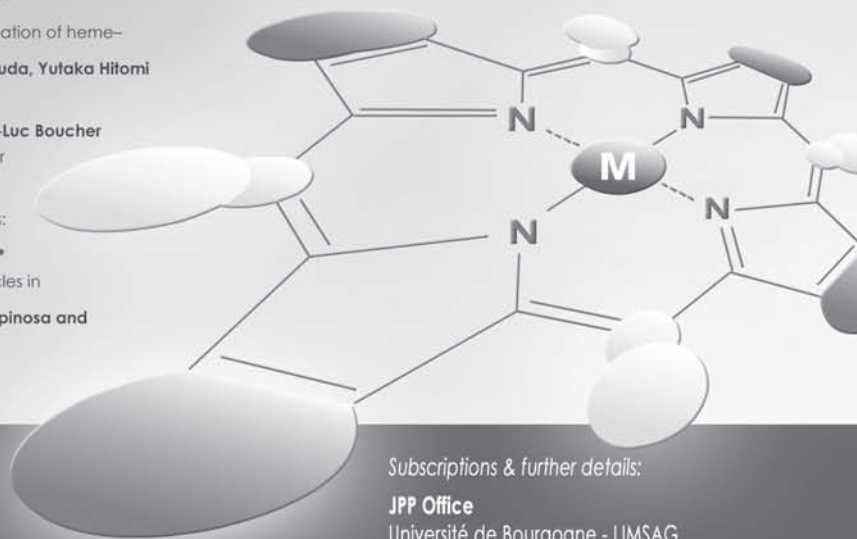
An international journal devoted to research  
in the chemistry, physics, biology and technology of  
porphyrins, phthalocyanines and related macrocycles

Dedicated to Professor Hisanobu Ogoshi  
on the occasion of his 70th birthday

Guest Editor: Takashi Hayashi



ORDER special issue at  
[www.u-bourgogne.fr/jpp/](http://www.u-bourgogne.fr/jpp/)  
or receive it FREE as part  
of JPP 2004 subscription



Subscriptions & further details:

JPP Office

Université de Bourgogne - LIMSAG

Faculté des Sciences Gabriel - 6 bd Gabriel

21000 Dijon (FRANCE)

Fax: + 33 (0)3 80 39 68 39 - Email: [jpp@u-bourgogne.fr](mailto:jpp@u-bourgogne.fr)



# Journal of Porphyrins and Phthalocyanines

## Editor-in-Chief

Professor Karl M. Kadish (Houston, USA)

## Associate Editors

Professor Johann W. Buchler (Darmstadt, Germany)

Professor Ichiro Okura (Yokohama, Japan)

Professor Jonathan Sessler (Austin, USA)

Professor Kevin M. Smith (Baton Rouge, USA)

Professor Dieter Wöhrle (Bremen, Germany)

## Readership

Chemists, physicists, materials scientists, polymer scientists, spectroscopists, electrochemists, electronics and photonics engineers, biochemists and biophysicists.

The **Journal of Porphyrins and Phthalocyanines (JPP)**, launched in January 1997, is an international peer-reviewed journal which covers research in the chemistry, physics, biology and technology of porphyrins, phthalocyanines and related macrocycles.

**12 high quality issues are published yearly** featuring full research papers, communications and state-of-the-art reviews dealing with the synthesis, spectroscopy, processing and applications of these compounds.

**Print ISSN 1088-4246**

**institutional rate \$500/500€**

**personal rate \$225/225€**

**SPP member rate \$150/150€**

**Online now available!**

For further details, please visit:

**[www.u-bourgogne.fr/jpp/](http://www.u-bourgogne.fr/jpp/)**

Related conference:

**ICPP-3**

July 11-16, 2004, New Orleans, USA

<http://www.icpp.uh.edu/>

**S**ociety of  
**P**orphyrins &  
**P**hthalocyanines



## Journal of Porphyrins and Phthalocyanines

The official journal of SPP

Volume 8 - Numbers 1, 2 & 3 - Pages 1-316

[www.u-bourgogne.fr/jpp/](http://www.u-bourgogne.fr/jpp/)

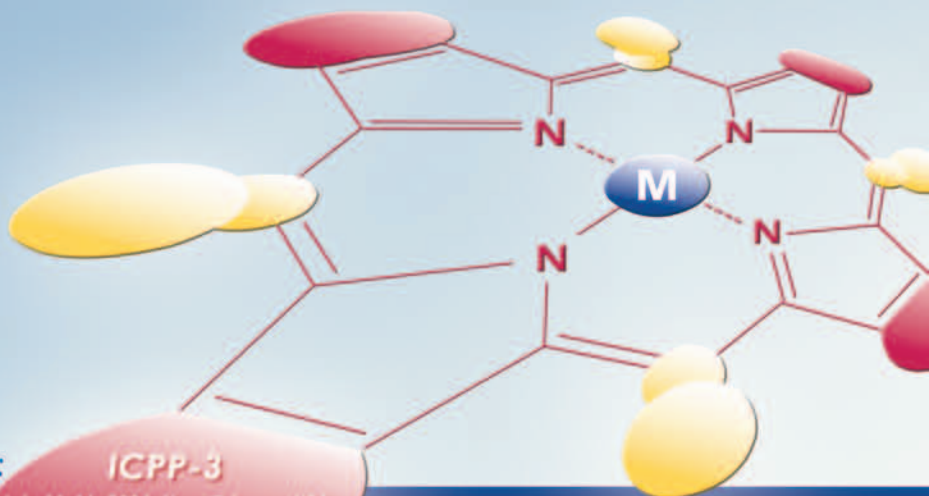
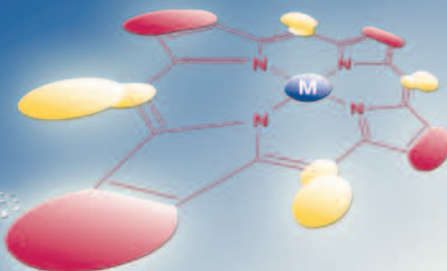
2004 - ISSN 1088-4246

An international journal devoted to research  
in the chemistry, physics, biology and technology of  
porphyrins, phthalocyanines and related macrocycles

Dedicated to Professor Hisanobu Ogoshi  
on the occasion of his 70th birthday

Guest Editor: Takashi Hayashi

Society of  
Porphyrins &  
Phthalocyanines



Orders & further details:

**JPP Office**

Université de Bourgogne - LIMSAG

Faculté des Sciences Gabriel - 6 bd Gabriel

21000 Dijon (FRANCE)

Fax: + 33 (0)3 80 39 68 39 - Email: [jpp@u-bourgogne.fr](mailto:jpp@u-bourgogne.fr)