



## Dedication to Professor Claudio Ercolani on the Occasion of his 75<sup>th</sup> Birthday

Dear Reader!

This issue of the journal *Macroheterocycles* contains several papers dedicated to Professor Claudio Ercolani – member of the International Advisory Board of *Macroheterocycles* – on the occasion of his 75<sup>th</sup> birthday. Professor Ercolani belongs to pioneers in the research of phthalocyanine complexes – his first paper on iron phthalocyanine was published in 1963. We, all colleagues and friends of Professor Claudio Ercolani, congratulate him with this glorious Anniversary, and wish him a healthy and long life with his wife Graziella and many further successful years in research of phthalocyanines and their analogues.

### Scientific Career

Prof. Claudio Ercolani received his Doctor Degree in Chemistry at the University of Rome “La Sapienza” in 1960. He was a postdoctoral fellow at the same University in 1961, at Manchester University (England) in 1964, and Research Associate at Florida State University (Tallahassee, Flo) in 1967-68. Since 1961 he started and developed his career, as Researcher, at the Italian Research National Council (CNR) and, while directing a research group, he was appointed the top position of “Research Director” (1974), kept until 1985. He got the “Libera Docenza” in 1969, and for many years was also Assistant Professor at the University “La Sapienza”. In 1985, after resigning from the CNR, he became Associate and then Full Professor at the same University, where he worked until his retirement (October 2008).

Professor Ercolani spent several working periods in England, Germany, United States, and Australia, and was invited lecturer in Europe, United States, Canada, Russia, and in many universities in Italy. In 1992, he was component of a University Committee and visited China (Peking) for the definition of the planned exchange programs between the University of Rome “La Sapienza” and several Chinese Universities. He was the organizer of microsymbiosia and lecturer at the ICPP-1 (International Conference on Porphyrins and Phthalocyanines; Dijon, 2000) and ICPP-3 (New Orleans, 2004) and was invited to give a plenary lecture at the ICPP-4 (Rome, July, 2006). Since the 1970's, he was active participant to the International Congresses on Coordination Chemistry (ICCC) several times. In the nineties, he was “pro vice-Chancellor” for the Scientific Research at the University of “La Sapienza” and was the main responsible person for the organization of the University Congress of Rome for the triennial activity of the same University for the period 1988-91.

Since the 1960's Prof. Ercolani was a member of the Italian Chemical Society and of the Royal Society of Chemistry and is presently member of Society of Porphyrins and Phthalocyanines (SPP).

### Research Activity

Professor Ercolani has published more than 120 scientific works including 8 book chapters and review articles.<sup>[1-8]</sup> Among other research items, he has developed especially intense and successful scientific activity and published 90 research articles in the field of tetrapyrrolic macrocycles, devoting his attention to:

- 1) Synthesis and characterization of new monophthalocyanine complexes.<sup>[9-14]</sup>
- 2) Interaction of metal phthalocyanines with small molecules (NO, CO, O<sub>2</sub>) and N-bases.<sup>[15-31]</sup>
- 3) Dioxygen activation, oxygen atom transfer, and oxidative catalysis.<sup>[28-31]</sup>
- 4) Synthesis and investigation of the molecular and electronic structure of single-atom bridged homo- and heterobimetallic  $\mu$ -oxodiiron(III) bisphthalocyaninates,<sup>[32-43]</sup> as well as  $\mu$ -nitrido<sup>[44-51]</sup> and  $\mu$ -carbido<sup>[52-53]</sup> complexes of general formula (L)M-X-M'(L') (X = O, N, C; L and L' phthalocyanine or porphyrin dianions) containing iron in high-valence states (Fe<sup>IV</sup>).
- 5) Bis(phthalocyanine) monometallic molecules (sandwich-type molecules) [(Pc)<sub>2</sub>M].<sup>[54-59]</sup>
- 6) Magnetic and electrical conductivity properties of metal-metal bonded ruthenium- and osmium phthalocyanine dimers [(Pc)M]<sub>2</sub>.<sup>[60,61]</sup>
- 7) Monodimensionally aligned metal phthalocyanine aggregates with conductivity properties.<sup>[62,63]</sup>
- 8) In more recent times (1996-2008) the scientific activity of Prof. Ercolani has shifted to the synthesis and

investigation of the structural and electronic properties and examination of possible applicative aspects of novel classes of heterocyclic phthalocyanine analogues - porphyrazines with fused highly electron-withdrawing aromatic heterocycles: 1,2,5-thiadiazoloporphyrazines,<sup>[64-74]</sup> 1,2,5-selenodiazoloporphyrazines,<sup>[64,72,75,76]</sup> 1,4-diazepinoporphyrazines,<sup>[77-79]</sup> and pyrazinoporphyrazines with pyridyl rings<sup>[80-95]</sup> or other peripheral substituents.<sup>[96-97]</sup> This research field has been reach of fruitful results also contributed at national (C. Rizzoli, Parma; M. Meneghetti, Padova; R. Rosa and G. Ricciardi, Potenza) and international level (K. M. Kadish, Houston, Texas; P. Stuzhin, Ivanovo, Russia).

Moreover one of the most promising aspects of actual interest is the behaviour of these porphyrazine systems as photosensitizers for the generation of singlet oxygen, <sup>1</sup>O<sub>2</sub>, the main cytotoxic agent active in photodynamic therapy (PDT), but also the possibility of some of them to be used as bimodal or multimodal anticancer agents.

Prof. Ercolani published his papers almost exclusively in journals of high international level and he is still very active in research, as testified by the most recent publications.

## List of Collaborators

### Present Research Group

Dr. Donzello Maria Pia  
Prof. Giuliano Moretti  
Prof. Fabrizio Monacelli  
Dr. Elisa Viola (Post Doc)  
Dr. Piera Moro (PhD student)  
Dr. Giorgia De Mori (PhD student)  
Dr. Daniela Vittori (PhD student)

### International and National Collaborations

- Prof. K. M. Kadish (University of Houston, Texas, USA).
- Prof. P. A. Stuzhin (Ivanovo State University of Chemistry and Technology, Russia)
- Prof. K. Awaga (University of Nagoya, Japan)
- Profs. A. Rosa and G. Ricciardi (University of Basilicata, Italy)
- Prof. C. Rizzoli (University of Parma, Italy)
- Prof. U. Russo (University of Padova, Italy)
- Prof. V. L. Goedken (University of Tallahassee, Flo, USA)
- Italian Research National Council (CNR)
  - Dr. Gianna Pennesi
  - Dr. Gentilina Rossi
  - Dr. Anna Maria Paoletti
  - Dr. Aldo Capobianchi
  - Dr. Elvira Maria Bauer

## Degree and PhD Students

### Degree Students

Giuseppe Trigante	Federica Scannerini
Lucia Cellucci	Sara Moraschi
Maria Pia Donzello	Laura Bartolino

Elvira Maria Bauer  
Silvia Angeloni  
Demetria Cardarilli  
Rita Agostinetto  
Giulia Andreis  
Francesca Vitali  
Michela Frascchetti  
Massimiliano Manni

Maurizio Quintiliani  
Costanza Bergami  
Andrea Colabucci  
Piera Moro  
Giorgia De Mori  
Daniela Vittori  
Giorgio Maria Reali

### PhD students

Elvira Maria Bauer	Pera Moro
Costanza Bergami	Giorgia De Mori
Elisa Viola	Daniela Vittori

## Publications on Phthalocyanines and Their Analogues

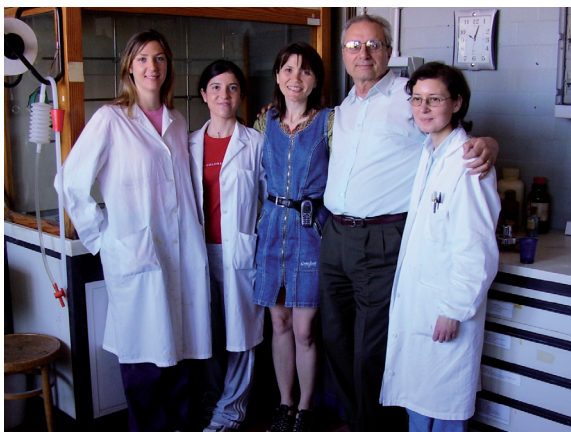
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2. Ercolani C., Floris B. Metal Phthalocyanine Single-Atom Bridged Dimers. Part II. Recent Results. In: *Phthalocyanines: Properties and Applications*. VCH Publ., New York, **1995**, Vol. 4, pp. 405-426.
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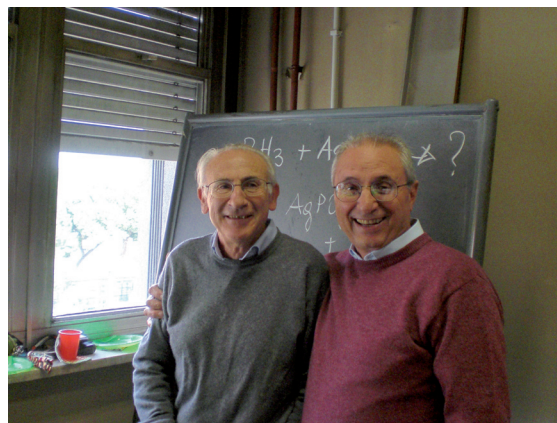
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12. Scrocco M., Ercolani C., Paoletti A.M. Electron Energy Loss and X-Ray Photoelectron Spectra. Part 2. Phthalocyanine





Prof. Claudio Ercolani in his lab with C. Bergami, E. Viola, L. Tomachinskaya and M.-P. Donzello



With his old friend and colleague Prof. Fabrizio Monacelli



Prof. Ercolani with his wife Graziella and Dr. M.-P. Donzello (left)



With Dr. M.-P. Donzello, Prof. K. Kadish and Graziella during IX International Conference on Chemistry of Porphyrins and Their Analogues (Suzdal', 2003)



Prof. Ercolani with his colleagues from CNR at ICPP-4 (Rome, 2006): G. Rossi, A. M. Paoletti, G. Penessi, E. M. Bauer



With Prof. Pavel Stuzhin at ICPP-5 (Moscow, 2008)

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### Sandwich-type Bisphthalocyaninates

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### Metal-metal Bonded Phthalocyanine Dimers

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### Monodimensionally Aligned Metal Phthalocyanine Aggregates with Conductivity Properties

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### Heterocyclic Analogues of Phthalocyanines

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