



**Università degli Studi di Roma “Tor Vergata”**

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**Dipartimento di Scienze e Tecnologie Chimiche**

Via della Ricerca Scientifica, 1 - 00133 Roma (IT) - Tel +39 06 72594337 Fax +39 06 72594328

## **AVVISO DI SEMINARIO**

**MARTEDI' 12 FEBBRAIO ORE 11:00**

*nell'Aula Seminari del Dipartimento di Scienze  
e Tecnologie Chimiche, il*

*Prof. Martin Bröring*

*Technische Universität Braunschweig  
Institute for Inorganic and Analytical Chemistry*

*Terrà un seminario dal titolo:*

**Ring-Contracted Metal Porphyrins and the  
Wizard of SPIN**

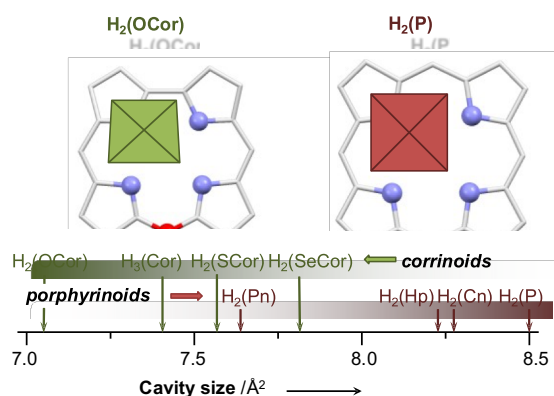
*Proponente: prof. Roberto Paolesse*

## Abstract

### Ring-Contracted Metal Porphyrins and the Wizard of SPIN

Prof. Dr. Martin Bröring, IAAC TU Braunschweig

A special feature of naturally occurring and catalytically active metal porphyrins like the hemes, cobalamine, or cofactor F<sub>430</sub>, is their ability to vary binding affinities and redox potentials by non-planar ligand distortions within a given protein scaffold. These distortions result in variations of both, electronic and steric metal-ligand interactions, and this fine-tuning is often the clue to the understanding of a specific function.



One possible way to control porphyrin-metal interactions in the laboratory is the exchange of the natural ligand by ring-contracted porphyrinoids like the corroles, heterocorroles, or the like. In fact, the characteristics of transition metal chelates of such bioinspired ligand systems clearly deviate from the natural archetype, and the differences observed in transition metal electronic structure relates to largely altered reaction characteristics. The presentation will discuss current selected examples of such metal chelates from the group, focusing on spin-dependent cases.