

# Editorial



Christoph Weder

## NCCR Bio-Inspired Materials

The National Center of Competence in Research (NCCR) Bio-Inspired Materials was launched in June 2014 with the vision of becoming an internationally recognized interdisciplinary hub for research, education, and innovation in the domain of ‘smart’ bio-inspired materials. The Center has its headquarters at the Adolphe Merkle Institute of the University of Fribourg and so far a total of 23 research groups from the Universities of Fribourg and Geneva, and the Federal Institutes of Zurich and Lausanne have participated in this venture. After four very successful years, the Swiss National Science Foundation (SNSF) council has approved the continuation of the Center in a second funding phase. The NCCR is thus in a transition period that offers an ideal opportunity to highlight the past and present activities of our Center, as well as some of our future directions in this special issue of CHIMIA.



Curzio Rüegg

The three overarching goals of the NCCR Bio-Inspired Materials are to take inspiration from Nature to establish design rules and strategies for the creation of new stimuli-responsive materials, to develop an understanding for the interactions of such materials with living systems, and to utilize the generated knowledge to develop innovative applications. Currently the Center’s research is organized in three strongly connected modules that focus on (i) Mechanically Responsive Materials across Different Length Scales; (ii) Biologically Inspired Assembly of Optical Materials; and (iii) Responsive Bio-Interfaces and Surfaces.

Besides its research activities, the Center has also launched and leverages many programs that integrate research and education, support knowledge and technology transfer, and promote equal opportunities in science. The first Phase (2014–2018) was by all measures very successful, served to launch many new internal and external collaborations, and allowed the Center to have a structural impact on its home institution through the creation of professorships, the re-direction of hires, and the purchase of large interdepartmental equipment.



Lucas Montero de Espinosa

As we have moved into the second Phase, we would like to acknowledge the generous support from the Swiss National Science Foundation and the University of Fribourg through the years, and thank all the past and present participants of the Center for their commitment and outstanding contributions. The following pages contain a selection of short reviews and original works that shall illustrate the Center activities since its beginning and into the future. We hope this issue makes for an interesting read and hope that you will appreciate the potential that bio-inspired concepts have to shape the future of materials science.

Christoph Weder  
Director  
Adolphe Merkle Institute  
University of Fribourg

Curzio Rüegg  
Deputy Director  
Section of Medicine  
University of Fribourg

Lucas Montero de Espinosa  
Scientific Coordinator  
Adolphe Merkle Institute  
University of Fribourg

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It is with great pleasure that the Editorial Board of CHIMIA warmly thanks Prof. Christoph Weder and his fellow guest editors Prof. Curzio Rüegg and Dr. Lucas Montero de Espinosa for their efforts in the planning and successful realisation of this interesting and topical issue on ‘NCCR: Bio-Inspired Materials’