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## Supramolecular Chemistry

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## Supramolecular Chemistry: The Future

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## Editorial

# Supramolecular Chemistry: The Future

This Special Issue of *Supramolecular Chemistry* is dedicated to the future of Supramolecular Chemistry. In preparing this issue, my aim was to select some of the world's best young Supramolecular Chemists and to give them the opportunity to submit papers which would reflect the diverse and international nature of Supramolecular Chemistry.

In the issue, there are 16 papers coming from 19 leading young scientists in 11 different countries. These young scientists will certainly influence and shape the future of Supramolecular Chemistry over the coming years. At the front of each paper, I have asked the authors to highlight how they think the field might develop over the coming years and what the impact of Supramolecular Chemistry might be. The issue thus represents a unique snapshot of how the young people in the field perceive our future.

It is already clear that Supramolecular Chemistry will both impact dramatically on materials design and synthesis and be the key to the design of bioactive agents in the emerging field of Chemical Biology. In the application of supramolecular approaches in the Biological arena, *Olivia Reinaud* describes biomimetic metal complexes based on calixarene derivatives in which the supramolecular cavity is used to mimic a protein cleft; *Markus Albrecht* describes supramolecular cyclopeptides as mimics of natural bioactive peptide loops; *Itaru Hamachi* reports pH-responsive supramolecular hydrogels; and *Eric Simanek* investigates dendrimers for drug-delivery applications.

Many of the papers herein focus on using the supramolecular approach to enable smart, responsive functional materials for application in diverse environments, hinting at the tantalising prospects and benefits that society will reap: *George Shimizu* and *Kari Rissanen* both describe the use of supramolecular crystal engineering to organise solid-state materials; *Roland Krämer* investigates nano-sized metallo-supramolecular assemblies; and *Dirk Kurth* reports thin films of metallo-supramolecular coordination polyelectrolytes. *Koen Binnemans* describes

metallomesogens, and *Dina Yannakopoulou* investigates rotaxation of dyes to influence their properties. *René Williams*, *Luisa De Cola* and *Frédéric Fages* study energy transfer in nano-sized arrays containing photoactive components, and *Jon Parquette* explores how to control folding in synthetic arrays using supramolecular interactions. Receptors and sensing remain an important goal: *Zoe Pikramenou* explores photoactive metalocyclodextrins with dual-function recognition sites for luminescent sensing; *Bruce Gibb* explores self-assembly with covalent modification as a synthetic strategy for receptor design; *Angelo Taglietti* explores the design of supramolecular chemosensors; and *Thorri Gunnlaugsson* explores luminescent lanthanide chemosensors. It is clear that the future is bright, diverse and in good hands.

Finally, I must finish with some apologies and some acknowledgements... The selection of the "best young Supramolecular Chemists in the world" is entirely my own and so, of course, a very personal view. There are leading young Supramolecular Chemists who are not included herein and I hope they will recognise that the constraints of the size of the issue made it impossible to include everyone. In particular the UK currently has a particularly strong batch of young Supramolecular Chemists many of whom I count as good friends and I hope they will forgive me for their omission. I am grateful to two senior colleagues, one in the US and one in Europe, who were kind enough to help me by highlighting some young people in certain aspects of the field. Since the selection was mine, I will not embarrass them by naming them; but they know who they are and I am very grateful to them for their advice. Associate Editor Phil Gale was responsible for persuading me to take on the (thankless) task of organising this special issue and also oversaw the refereeing of Zoe Pikramenou's paper for me.

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