

One- and Two-Dimensional Inorganic Nanomaterials



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Editor EurJIC

In recent years nanotechnology has spawned a plethora of new journals. Research articles on inorganic compounds that fall into the nano size range are often published either in these journals or in materials journals. Although electronic searches are excellent for finding articles on a specific topic wherever they are published, they are less appropriate to provide a broad insight into developments in neighbouring fields. An issue such as this one provides an opportunity to cluster articles that might not otherwise come to the attention of inorganic chemists who work on closely related fields. EurJIC has, therefore, great pleasure in bringing you this Cluster Issue on a subject fundamentally grounded in inorganic chemistry, but “rented out” to other disciplines. At the start I wish to thank Professor C. N. R. Rao, our Guest Editor, for his collaboration on this issue. His expertise is legendary and has been recognized by the many honours showered upon him, the

**Guest Editor
C. N. R. Rao
honoured**

latest being the August-Wilhelm-von-Hofmann Gold Medal of the German Chemical Society, presented at the 3rd European Chemistry Congress at the end of August 2010.

We very much appreciate the time that he has invested in this Cluster Issue for EurJIC amongst all his other responsibilities to provide this high-quality and thought-provoking view of one- and two-dimensional inorganic nanomaterials.

In his editorial, Professor Rao has addressed the special relationship between nanotechnology and inorganic chemistry. It was the dichotomy between this symbiosis and the small amount of nanochemistry that is generally published in inorganic chemistry journals that prompted us to make a major change in our general policy for this issue. To give our readers the best overview of topics in nanoscience that are important for various aspects of our discipline, we have allowed eight

**An exceptional cluster
of Microreviews**

Microreviews. Magnetism is a topic of great interest to readers of this journal. One Microreview by Akira Miyazaki, Toshiaki Enoki and Yoshikazu Ito covers new classes of nanomag-

nets. At present the knowledge on silicon nanowires is expanding rapidly. Shuit-Tong Lee et al. provide an overview on their synthesis and applications. A vital aspect of those applications concerns new sources of energy. Another Microreview by Jinwoo Lee and Jinyoung Chun also addresses this

crucial question: they report on semiconductor nanorods and their significance for photovoltaic cells. The targeted synthesis of compounds is the mainstay of all chemical science, and a knowledge of the growth mechanisms for the observed nanomorphologies allows the control required for designer materials. Three reviews focus mainly on synthesis: C. N. R. Rao and Angshuman Nag discuss analogues of graphene, Reshef Tenne, Malcolm Green, et al. have investigated the encapsulation of one-dimensional crystals within nanotubes, and Isabel Pastoriza-Satos, Luis Liz-Marzán and Ramón A. Alvarez-Puebla review the synthesis and growth mechanisms of gold and silver nanoplates. Finally the more specialized topic of nanothermometers for the analytical technique of transmission electron microscopy is dealt with by Lih-Juann Chen and Chiu-Yen Wang. Other synthesis techniques, properties and applications have not been ignored, but can be found in the Short Communications and Full Papers. Representative of these papers I would like to highlight the only Short Communication that is depicted on the cover together with three of the reviews. The group of Yoong Ahm Kim reports on its research on the functionalization of carbon nanotubes.

My thanks are due to all authors who responded to the invitation of the guest editor to contribute to this exciting issue on a subsection of nanoscience of growing relevance. In particular, we are grateful to the four authors whose graphics grace the cover. We appreciate the excellent work of the peer reviewers, especially those who were prepared to review papers under extreme pressure to ensure that the issue was not held up by late papers.

The importance of nanotechnology is emphasized by the number of research programs that are funded by many countries worldwide. Many inorganic chemists have already included nanochemistry projects in their research and more are considering these in their future plans. EurJIC hopes that this stimulating Cluster Issue will enrich your research and give you an insight into the potential of this technology for solving the challenges of today's world.

**Current focus of
research funds for
nanotechnology**

Karen J. Hindson