

# Editorial

## Chemistry in India Part II



Peter Maienfisch

The ever-expanding canvas of chemistry is notable for its breathtaking diversity, creative possibilities and utilitarian value. Chemistry endeavors to harness processes and events that range from molecular to supramolecular, macromolecular to nanoscale, from molar to attomolar and from millennia to femtoseconds as it addresses contemporary challenges at the interface of biology and material science. Indeed, owing to its exceptional attribute of molecular level interdisciplinary connect, chemistry is ideally placed to contribute significantly towards topical issues related to sustainability, human health and wellbeing, food and environmental security, water *etc.* that are of foremost concern in the 21<sup>st</sup> century. It is not surprising therefore that the current research developments in chemistry are not only expanding its own traditional domain but also advancing to explore the emergent interdisciplinary terrain. The direction of contemporary chemistry research in India is no different from this trend and is well aligned to the cutting edge advances elsewhere.



Goverdhan Mehta

With 'Chemistry in India' we wish to provide the reader a flavor of current chemical research in India. Sixteen representative contributions from some of the leading chemists, covering diverse areas of their research activities, are presented in two consecutive CHIMIA issues – the preceding CHIMIA issue 12/2012 and the current CHIMIA issue 1-2/2013.

In the Editorial of CHIMIA issue 12/2012 we reflected upon the development and perspectives of the chemical industry and chemical research in India. In this Editorial we capture the main essence of the contributions covered in the two CHIMIA issues devoted to Chemistry in India.

CHIMIA issue 12/2012 contained contributions in mainline organic chemistry, research at interfaces like soft matter, facets of chemical biology and supramolecular chemistry. **Goverdhan Mehta** described the facets of self-assembly in conformationally locked polycyclitols; **Krishna P. Kaliappan** on recent applications of domino metathesis reactions; **Yashwant D. Vankar** on the functionalization of glycals to access new glycosidase inhibitors; **Irishi N. N. Namboothiri** on exploration of conjugated nitroalkenes as substrates for Morita-Baylis-Hillman and Rauhut-Currier reactions; **Srinivasan Chandrasekaran** on the versatility of tetraethylammonium tetrasetenotungstate as selenium transfer reagent; **Sandeep Verma** on the construction and morphology of soft structures using a peptide backbone; **Krishna N. Ganesh** on the DNA transfection properties of designer proline peptides and **C. N. R. Rao** on the synthesis of novel nanomaterials based on graphene, graphene nanoribbons and nanoscrolls.

In this CHIMIA special issue, we present eight more contributions featuring a diverse range of chemistry research activity in India. **Deevi Basavaiah** dwells on the conceptual influences of the Baylis-Hillman reaction on contemporary organic synthesis; **Hiriyakkanavar Ila** on molecular diversity generation and heterocyclic synthesis through novel organosulfur synthons; **Mariappan Periasamy** on strategies for ready access to chiral amino alcohols and amines; **Ganesh Pandey** on the efficacy of  $\alpha$ -trimethylsilyl-methylamine radical cation in accessing cyclic amines; **Santanu Bhattacharya** on designer benzimidazoles for facilitating switchover of the duplex to the G-quadruplex DNA recognition; **Uday Maitra** on building functional soft materials through multi-component molecular self-assembly; **Ayyappanpillai Ajayaghosh** on supramolecular assembly of chromophore based organo- and hydrogels for varied applications; and **Vadapalli Chandrasekhar** on the design of novel functionalized phosphazenes as supports for the construction of multi-site coordination platforms.

Overall, the topics covered in the special issues 12/2012 and 1-2/2013 attempt to provide a 'whiff' of chemistry research in India. As editors of these two special issues of CHIMIA, we would like to thank all the authors for their fine contributions despite the tight timelines. We are particularly thankful to Professor Uday Maitra for the background photograph and Dr. Saikat Sen for the cover design. We wish you an enjoyable and informative read of this second part of 'Chemistry in India'.

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The Editorial Board of CHIMIA warmly thanks the coordinating guest editors Dr. Peter Maienfisch and Prof. Goverdhan Mehta for their great efforts in putting together these extremely interesting and informative issues on Chemistry in India.