

Preface

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In November 2011, scientists gathered at the 67th Southwest Regional Meeting of the American Chemical Society, held in Austin TX. One of the symposia held during the meeting was entitled “Main Group Chemistry: A Continual Source of Fundamental New Knowledge and Applications in Everyday Life”. Meeting participants with interest in the chemistry of the main-group and lanthanoid elements attended this symposium aimed at highlighting fundamental aspects of the chemistry of these elements, as well as areas where they also find practical utility in everyday life. Indeed the chemistry of these elements cuts across and impacts various sub-disciplines of inorganic chemistry and materials science, finding application in areas including; separations science; ceramics and glasses; small molecule catalysis and bond activation reactions (including biochemical systems); in luminescent and photoactive molecules and materials, and; in polymer synthesis. The papers contained within this special issue of *Main Group Chemistry* touch a number of these areas and highlight the diverse nature of the work currently being pursued by researchers interested in this field.

The list of symposium speakers and the subject of their talks is shown directly after this preface. In terms of papers highlighted in this special issue of *Main Group Chemistry*, we received a number of submissions for consideration. The first few manuscripts focus on p-block chemistry. A paper from John Gordon’s group at Los Alamos highlights the reactivity of the (1*R*, 2*R*)-*N,N'*-Bis(2-pyridylmethylene)cyclohexane-1,2-diamine (BPID) ligand with germanium and tellurium. The main group chemistry theme is then continued in a contribution from David Schubert and colleagues who describe the chemistry of 1,*n*-diaminoalkanes with boric acid and the structural characterization of some resulting borates. Charles Weinert and co-workers describe some Group 14 chemistry, in this case, the preparation of a germylene and its reactivity with a benzil based trapping reagent. Rick Kemp and co-workers address a topic of intense current interest in the activation of carbon dioxide, and in this vein describe the insertion chemistry of this molecule with magnesium and zinc compounds. Moving briefly to the 4f-block elements, a contribution from the laboratory of Ana de Bettencourt Dias highlights the isolation and structural characterization of trivalent europium and terbium complexes supported by triazinebenzamide and benzoate ligation. The last two contributions in this issue focus on the coordination chemistry of mixed nitrogen-sulfur and thiolate based ligands. Lisa Berreau and colleagues describe the structural characterization of mercury complexes supported by the (*N,N*-bis(2-methylthio)ethyl-*N*-((6-neopentylamino-2-pyridyl)methyl)amine) ligand,

while a paper from the laboratory of Panayiotis Ioannou in Greece, focuses on the chemistry of trivalent arsenic and bismuth with a number of sulfur containing donors.

The fields of main group and lanthanoid metal chemistry represent large, diverse and vibrant areas of activity, and the chemistries of these elements indeed play important roles in our everyday lives.

I am grateful to IOS Press BV and US Borax, Inc., Rio Tinto for sponsoring the aforementioned symposium, and I am particularly indebted to Professor David Atwood of the University of Kentucky, Editor of *Main Group Chemistry*, who did an excellent job of organizing the event in Austin. Finally, thanks to all of the symposium participants and in particular to those of you who contributed articles to this special issue of *Main Group Chemistry*. I hope to see you at a meeting in the near future.

Symposium Speakers and Presentations

Main Group Chemistry: A Continual Source of Fundamental New Knowledge and Applications in Everyday Life

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D.A. Atwood, *Organizer, Presiding*

1. Arsenic (III) Removal from Water with New Thiol-Containing Filtration Materials. **D.A. Atwood**, P. Jana, R. Douglass, R. DeJaco
2. Chemistry of boron in everyday life. **D.M. Schubert**
3. Some recent lanthanide and main group element chemistry from Los Alamos. **J. C. Gordon**, B. L. Scott and K. V. Vasudevan
4. New triazine-pyridylamide ligands for the complexation of lanthanide ions and sensitization of their luminescence. **A. de Bettencourt-Dias**, J.S. Zimmerman, C.E. Carr, R. Sydow, V. Menon
5. Interactions of main group complexes with CO₂ and CS₂. D.A. Dickie, C.A. Stewart, B.M. Barry, W.E. Geiger, R. Waterman, **R.A. Kemp**
6. Photochemically-induced dioxygenase type CO-release reactivity of metal flavonolate complexes. K. Grubel, B.J. Laughlin, T.R. Maltais, R.C. Smith, A.M. Arif, **L.M. Berreau**
7. Artificial Hydrogenases: Construction of peptide models for [FeFe]-hydrogenases. S. Roy, A. Dutta, S. Shinde, G.A. Hamilton, H.E. Hartnett, **A.K. Jones**
8. Triazapentadienyl ligands as a versatile metal ion chelator. **R. Dias**
9. Aluminum(III) and Zn(II) complexes in Diels-Alder and ROP of rac-lactide. **M.A. Muñoz-Hernandez**, E. Rufino-Felipe, F.A. Vengoechea-Gomez, N. Crespo-Velasco, S.A. Cortés Llamas, L.G. Guerrero-Ramírez
10. Complexes of pincer ligands with a central main group element donor. W. Gu, D.E. Herbert, **O.V. Ozerov**
11. Structural and Physical Aspects of Branched Oligogermanes. **C.S. Weinert**, C.R. Samanamu, M.L. Amadoruge
12. Bismuth(III) Calixarenes and Bisphenolates. **T. Hanna**, L. Liu, D. Mendoza Espinosa, B. Janesko, K. Brien, A. Rheingold