Faculty Profile

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Zhiping Zheng

Professor and Associate Head

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Honors

- Invited Professorship, Rennes 1 University, Rennes, France, 2008
- Excellence in Teaching, The Honors College, The University of Arizona, 2007
- International Junior Award, European Rare Earth and Actinide Society, 2003
- National Science Foundation CAREER Award, 2003
- China Bridge International Fellowship, 1998-2001
- Research Corporation Research Innovation Award, 1998-2002

Education and Appointments

- B.S. 1987, Peking University, China
- M.S. 1990, Peking University, China
- Ph.D. 1995, UCLA
- Postdoctoral Associate 1995-1997, Harvard University

Research Interests

- Inorganic
- Energy Science
- Materials and Polymer Chemistry
- Spectroscopy/molecular Structure
- Surfaces and Solid State
- Synthesis/Synthetic Methods Development

Research Summary

Synthetic Inorganic and Organometallic Chemistry, Supramolecular Chemistry, Catalysis, Materials Chemistry, Clusters and Nanostructured Materials

Our research, in the general areas of synthetic and structural inorganic chemistry, is directed toward developing new paradigms of coordination chemistry and creating metal-containing functional materials. The underpinning of our program has been the coordination and organometallic chemistry of both transition and rare earth elements. The unique and frequently aesthetically pleasing structural features, interesting properties, and potentially significant applications of transition metal- and lanthanide-containing substances provide multifold impetus for our efforts.

Selected Publications

1. "Keeping the ball rolling - Fullerene-like molecular clusters." Kong, X.; Long, L.; Zheng, Z.; Huang, R.; Zheng, L. *Acc. Chem. Res.* 2010, *43*, 201-209.

2. "Solvent-induced transformation of single crystals of a spin-crossover (SCO) compound to single crystals with two distinct SCO centers." Li, B.; Wei, R.; Tao, J.; Huang, R.-B.; Zheng, L.-S.; Zheng, Z. *J. Am. Chem. Soc.* 2010, *132*, 1558-1566.

3. "Cluster-bound nitriles do not click with organic azides – Unexpected formation of imine complexes of the $[Re_6(\mu_3\text{-}Se)_8]^{2+}$ core-containing clusters." Tu, X.; Boroson, E.; Truong, H.; Nichol, G. S.; Zheng, Z. *Inorg. Chem.* 2010, *49*, 380-382.

4. "Cluster compounds of the f-elements." Zheng, Z. *Handbook of Physical and Chemistry of the Rare Earth Elements* 2010, *40*, 109-240.

5. "A four-shell, 136-metal 3d-4f heterometallic cluster approximating a rectangular parallelepiped." Kong, X.; Nichol, G. S.; Long, L.; Huang, R.; Zheng, L. Harris, T. D.; Zheng, Z. *Chem. Commun.* 2009, 4354-4356 (cover illustration)

6. "A chiral 60-metal sodalite cage featuring 24 vertex-sharing $[Er_4(\mu_3\text{-}OH)_4]$ cubanes." Kong, X.; Wu, Y.; Long, L.; Zheng, L. Zheng, Z. *J. Am. Chem. Soc.* 2009, *131*, 6918-6919.

7. "Lanthanide-doped magnetite nanoparticles." De Silva, C.; Smith, S.; Shim, I.; Pyun, J.; Gutu, T.; Jiao, J.; Zheng, Z. *J. Am. Chem. Soc.* 2009, *131*, 6336-6337.

8. "Crystal engineering supported by the $[Re_6(\mu_3\text{-}Se)_8]^{2+}$ core-containing clusters." Tu, X.; Zheng, Z. *CryEngComm.* 2009, *11*, 707-719 (cover illustration).

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