

Ram Seshadri

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Research

Composition – structure – property relations in magnetic, optical, catalytic, and polar inorganic materials; patterned materials, including nanoparticles and porous materials.

Education:

1990-1995 M.S. in Chemistry & PhD in Solid State Chemistry, Indian Institute of Science, Bangalore, India (with C. N. R. Rao FRS). PhD Thesis titled *Investigations on Fullerenes, Carbon Nanotubes, Onions and Small Gold Particles*.

1986-1989 B.Sc. (Hons.) Chemistry, St. Stephens College, Delhi University, India.

Employment:

2008–present Professor, Materials Department, and Department of Chemistry and Biochemistry, UC Santa Barbara

2006–present Associate Professor, Materials Department, and Department of Chemistry and Biochemistry, UC Santa Barbara

2002–2006 Assistant Professor, Materials Department, UC Santa Barbara.

1999–2002 Assistant Professor, Solid State and Structural Chemistry Unit, Indian Institute of Science.

1997–1999 Post-Doctoral Fellow with Professor Wolfgang Tremel at the Institut für Anorganische Chemie, Universität Mainz, Germany: *Magnetic and CDW chalcogenides, biomineralization, and electronic structure of functional materials*.

1995–1996 Post-Doctoral Fellow with Professor Bernard Raveau at the Laboratoire CRISMAT, Caen, France: *High- T_C superconductors and CMR manganites*.

1989–1990 Pre-Doctoral Researcher in the Solid State and Structural Chemistry Unit, Indian Institute of Science: *High- T_C cuprate and bismuthate superconductors*.

Research interests and accomplishments

Professor Seshadri contributes to establishing fundamental understanding of structure-property relations in functional inorganic materials. Significant recent achievements from his group have included the development of solvothermal routes for a variety of inorganic nanomaterials, understanding the rôle that lone pairs of non-bonding electrons on ions such as Pb^{2+} and Bi^{3+} play in inducing polar and ferroic (including multiferroic) behavior, understanding the effects of structural topology in frustrating phase transitions in polar compounds, developing template-free routes to porous inorganic materials, and in revealing the importance of oxide-stabilized noble metal ions in oxidation catalysis.

Professor Seshadri has over 140 refereed publications in the broad area of Materials Chemistry.

Awards, honors, service:

- 2008** Director, ConvEne IGERT Program (supported by the NSF)
- 2007** Editorial Advisory Board, Chemistry of Materials
- 2007** Editorial Advisory Board, Journal of Materials Chemistry
- 2006** Professeur Invité, Université de Versailles, Saint-Quentin-en-Yvelines.
- 2005** American Chemical Society ExxonMobil Solid State Chemistry Faculty Fellowship.
- 2004** Co-PI of a National Science Foundation Chemical Bonding Center (one of three awarded).
- 2004** National Science Foundation Career Award.
- 2002** Journals Grant from the Royal Society of Chemistry/visitor at the Chemistry Department, Manchester.
- 2000** Professeur Invité, École Centrale Paris.
- 1999, 2001** Visitor, Anorganische Chemie, Universität Mainz.
- 1999** Journals Grant from the Royal Society of Chemistry/visitor at the Chemistry Department, Queen Mary, University of London.
- 1999** Young Associate of the Indian Academy of Science.
- 1996** Sudborough Medal for Best Thesis (over a 2-year period), Solid State and Structural Chemistry Unit.

Research Support:

From the National Science Foundation (Career Award, Chemical Bonding Center, MRSEC); Department of Energy, Hydrogen Fuel Initiative; American Chemical Society Petroleum Research Fund; Air Products and Chemicals; UC Discovery Program; Solid State Lighting and Energy Center, UCSB.