

Ram Seshadri

Professor, Materials Department
Professor, Department of Chemistry and Biochemistry
Address: Materials Research Laboratory, Room 3008
University of California, Santa Barbara, CA 93106-5121 USA

Phone: (805) 893 6129 | FAX: (805) 893 8797
email: seshadri@mrl.ucsb.edu | internet: <http://www.mrl.ucsb.edu/~seshadri>

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:

- 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.

Meetings, workshops, and summer schools:

- UCSB-MPG Workshop on Inorganic Materials for Energy Conversion, Storage and Conservation, February 19 to 22, 2008, Lake Arrowhead, CA
- International Workshop on Synthesis of Functional Oxide Materials, August 19 to 23, 2007, UCSB.
- MRS Fall Symposium QQ: Solid State Chemistry of Inorganic Materials, November 27 to December 1, 2006, Boston, MA
- ICMR Summer School on Porous Materials, July 31 to August 12, 2006, UCSB
- FestSchrift Symposium for Tony Cheetham, April 6 and 7, 2006, UCSB
- ICMR Summer School on Biomaterials, August 7 to 20, 2005, UCSB

Advisees in Santa Barbara (current location)

Undergraduate interns: Katheryn Whitehead (UCSB → Caltech), Lily Lee (UCSB → Amgen, Thousand Oaks), Ryan Haggerty (UCSB → UIUC), Rey Honrada (Alan Hancock College, Santa Maria → Cal Poly SLO), Katharine Page (University of Maine at Orono, → UCSB), Lauren Snedeker (MTU, Houghton → Penn State), Micah Hall (University of Memphis → Cal Poly SLO), Abhijit Joshi (Santa Barbara City College → UCLA), Richard McRoy (Sheffield), Christina Borgese (UCSB → Chlorox Corporation), Brent Melot (UCSB), Joseph Day (UCSB), Ryan Mansergh (UC Berkeley). Holly Szumila (Embry-Riddle Aeronautical University), David Levi-Cantu (UCSB), Christina Schade (Mainz), Thomas Schladt (Mainz), Peter Allen (UCSB → MIT), Madeleine Grossman (UCSB), Jennifer Drewes (UCSB), Shemekia Braddock (Jackson State), Timo Schüler (Mainz), Ivana Sabaj Abumohor (Universidad de Chile, Santiago).

RET Intern: Mr. Stephen Svoboda (Newbury Park High School); Mr. Barnaby Dillon (Dos Pueblos High School)

Graduate students: Aditi Risbud, 2001 to 2005 (Weber-Shandwick, Chicago), Eric Toberer, 2002 to 2006 (Beckman Post Doctoral Fellow, Caltech), Katharine Page, 2004 to present, Brent Melot, 2006 to present, Daniel Shoemaker, 2006 to present, Joshua Kurzman, 2007 to present

Graduate student visitor: Nicole Berntsen, 2003 (Mainz)

Post Doctoral Fellows: Dave Wolfe, 2002 to 2003 (Raytheon, Goleta), K. Ramesha, 2002 to 2004, (JNCASR, Bangalore), Ombretta Masala, 2003 to 2005 (Nanoco, Manchester, UK), Srinivasa Thimmaiah, 2006 to 2007 (Ames Lab and Iowa State University), Jun Li, 2005 – , Young-Il Kim, 2006 – Serena Corr, 2007 – , Won-Bin Im, 2007 –

Advisees in Bangalore (current location)

Graduate students: Ujjal Gautam (Tsukuba, Japan), Hem Chandra Kandpal (Frankfurt, Germany), Sudip Barman (CNRC-NIN, Canada), Moumita Ghosh (Corvallis, OR)

Pre-doctoral fellows: Monalisa Panda (Darmstadt), Srinivasa Thimmaiah (Iowa State)

Undergraduate interns: Rajiv Basu (Intel) and Nikhil Singh (UIUC)

Visitor: Michael Rajamathi (St. Josephs College Bangalore)