Robin Santra

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Professional Experience

- **2008-Present**. Associate Professor, part-time, Department of Physics at the University of Chicago (Illinois), U.S.
- **2007-Present**. Physicist, Atomic, Molecular, and Optical Physics Group, Chemical Sciences and Engineering Division, Argonne National Laboratory (ANL), Argonne, Illinois, U.S.
- **2005-2007**. Assistant Physicist in the Atomic, Molecular, and Optical Physics Group, Chemistry Division, ANL, Argonne, Illinois, U.S.
- **2004-2005**. Postdoctoral Research Associate, Institute for Theoretical Atomic, Molecular and Optical Physics, Harvard-Smithsonian Center for Astrophysics, Harvard University, Cambridge, Massachusetts, U.S.
- **2002- 2004**. Postdoctoral Research Associate, JILA, University of Colorado; Boulder, Colorado, U.S.
- **2001-2002**. Postdoctoral Research Associate, Department of Chemistry, University of Heidelberg, Germany.

Education

- Ph.D., Theoretical Chemistry, University of Heidelberg, Germany, 2001.
- M.S., Physics, University of Heidelberg, Germany, 1998.

Research Interests

- Research supports the U.S. Department of Energy's (DOE's) basic science mission.
- Theoretical work complements the experimental program at ANL's Advanced Photon Source, a DOE national user facility. It also addresses important issues related to planned experimental research at fourth-generation X-ray sources, in particular, the Linac Coherent Light Source (LCLS) at the SLAC National Accelerator Laboratory.
- Theoretical Atomic, Molecular, and Optical Physics
- Theoretical Chemical Physics
- Ionization dynamics and inner-shell physics of atoms, molecules, and clusters
- Strong-field and electron-correlation effects in the extreme ultra-violet radiation (EUV) and X-ray regimes

- Applications of short-wavelength free-electron lasers
- Ultrafast laser-induced phenomena
- Electronic many-body theory
- Non-hermiticity in quantum mechanics

Awards

- Presidential Early Career Award for Scientists and Engineers (2008)
- Department of Energy Office of Science Early Career Scientist and Engineer Award (2008)
- IUPAP Young Scientist Prize in Atomic, Molecular, and Optical Physics, International Union of Pure and Applied Physics (2007)

Professional Society Affiliations

- Active member of the American Physical Society.
- Chair (Interim), Prairie Section, American Physical Society (April 2008 - present).
- Co-organizer, focus session on “Attosecond Science”' at the March 2010 APS meeting (Portland, Oregon, U.S., 2010).

Career Activities & Highlights

- Advised several students and postdoctoral appointees.
- Actively involved in outreach activities for the public.
- Co-organizer, KITP workshop on “X-ray Frontiers” (Kavli Institute for Theoretical Physics, University of California; Santa Barbara, California, U.S., 2010).
- Member, Local Organizing Committee, XXVI International Conference on Photonic, Electronic, and Atomic Collisions (Western Michigan University, U.S., 2009).
- Member, Advanced Photon Source Renewal Committee, AMO & Chemistry (2008).
- Co-organizer, ITAMP workshop, “X-ray Free-Electron Lasers: Challenges for Theory” (Institute for Theoretical Atomic, Molecular and Optical Physics, Harvard-Smithsonian Center for Astrophysics, Harvard University, U.S., 2006).

Publications, Presentations & Patents

- Publications: About 70.
- Presentations: About 60 invited talks at international conferences and seminars.