

Rajarshi Roy

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Educational Background

B. Sc. (Honours) in Physics, St. Stephen's College, Delhi University, 1973
M.Sc. in Physics, Delhi University, 1975, M.A., Physics, University of Rochester,
1977, Ph. D. in Physics, University of Rochester, 1981.

Employment History

Director, Institute for Physical Science and Technology, University of
Maryland, 2003 -
Professor, Department of Physics, Institute of Physical Science and Technology,
and Institute for Research in Electronics and Applied Physics, University of
Maryland, 1999 -
Chair, School of Physics, Georgia Institute of Technology, 1996 – 1999
Professor of Physics, Georgia Institute of Technology, 1993 - 1999
Associate Professor of Physics, Georgia Institute of Technology, 1987-1992
Visitor and Consultant, AT&T Bell Laboratories, Murray Hill, 1987
Assistant Professor of Physics, Georgia Institute of Technology, 1982-1986
Postdoctoral Research Associate, JILA, University of Colorado, 1981-1982

Five recent publications:

1. "Using Synchronization for Prediction of High-Dimensional Chaotic Dynamics," A. B. Cohen, B. Ravoori, T. E. Murphy and Rajarshi Roy, *Phys. Rev. Lett.* **101**, 154102 (2008).
2. "The effect of multiple time delays on intensity fluctuation dynamics in fiber ring lasers," A. L. Franz, Rajarshi Roy, L. B. Shaw, and I. B. Schwartz, *Phys. Rev E* **78**, 016208 (2008).
3. "Dual synchronization of chaos in Mackey-Glass electronic circuits with time-delayed feedback," S. Sano, A. Uchida, S. Yoshimori, and Rajarshi Roy, *Phys. Rev. E* **75**, 016207 (2007).
4. "Localized excitations in arrays of synchronized laser oscillators," Fabien Rogister and Rajarshi Roy, *Phys. Rev. Lett.* **98**, 104101 (2007).
5. "Changing Dynamical Complexity with Time Delay in Coupled Fiber Laser Oscillators," Anthony L. Franz, Rajarshi Roy, Leah Shaw and Ira B. Schwartz, *Phys. Rev. Lett.* **99**, 053905 (2007).

Five other significant publications:

Over one hundred and forty papers and chapters

1. "Observation of Stochastic Resonance in a Ring Laser", B. McNamara, K. Wiesenfeld and Rajarshi Roy, *Phys. Rev. Lett.* **60**, 2626 (1988).
2. "Dynamical Control of a Chaotic Laser: Experimental Stabilization of a Globally Coupled System", Rajarshi Roy, T.W. Murphy, T.D. Maier, Z. Gills and E. Hunt, *Phys. Rev. Lett.* **68**, 1259 (1992).
3. "Experimental Synchronization of Chaotic Lasers", Rajarshi Roy and K. Scott Thornburg, *Phys. Rev. Lett.* **72**, 2009 (1994).
4. "Communication with Chaotic Lasers", G.D. VanWiggeren and Rajarshi Roy, *Science* **279**, 1198 (1998).

5. "Synchronization and Communication with Chaotic Laser Systems", A. Uchida, J. Garcia-Ojalvo, F. Rogister and Rajarshi Roy, pp. 203 – 341, Chapter 5, Vol. 48, **Progress in Optics**, ed. E. Wolf (North Holland) (2005).

Lectures and Colloquia: About 150 invited talks at conferences and universities in the last fifteen years.

Recognitions

Monie A. Ferst Young Faculty Award of Sigma Xi, 1987.
Best Paper Award from Sigma Xi, 1992.
Fellow of the Optical Society of America, 1995.
Discover magazine technological innovation awards, 1999.
Fellow of the American Physical Society, 2000.
Best Paper of the Year Award, Laser Society of Japan, 2006 for paper with Atsushi Uchida and Ryan McAllister, collaborators.

Synergistic Activities

Editorial Board, Physica D, 2002 – 2008; Organizing Committee for Dynamics Days (2002); Chair, Gordon Conference on Nonlinear Science (2003); Organizing Committee for Dynamics Days (2005); Co-Organizer, Hands-On Research on Complex Systems Winter School, Institute for Plasma Research, Gandhinagar, India, January 2008. Scientific Organizing Committee, Solvay Workshop: "Bits, Quanta and Complex Systems; modern approaches to photonic information processing," Brussels, Belgium (2008).

Collaborators (past 5 years, not at the University of Maryland)

Atsushi Uchida (Japan), Fabien Rogister (Belgium), Ira Schwartz (Naval Research Laboratory), Daniel Gauthier (Duke University), Lucas Illing (Reed College), Brian Zhou (Caltech)

Graduate and Postdoctoral Advisors

Ph. D. thesis advisor, Leonard Mandel (deceased), University of Rochester
Postdoctoral advisor, Steven J. Smith, Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder.

Postdoctoral Associates, past five years:

Atsushi Uchida, Fabien Rogister

Ten postdoctoral associates over past twenty years.

Ph.D. Students, past five years:

Ryan McAllister (2003), Research Assistant Professor, Georgetown University
Wing-Shun Lam (2003), Staff Scientist, Intel
Bhaskar Khubchandani (2004), Staff Scientist, Intel
Elizabeth Rogers (2005), Optical Air Data Systems, Virginia
Min-Young Kim (2005), Staff Scientist, Korea Research Institute of Standards and Science (KRISS)
Will Ray (2006), Postdoctoral Associate, Hughes Research Labs, Malibu
Anthony Franz (2007), Faculty member, Air Force Academy, Colorado Springs

Twenty six students supervised for Ph.D. degree