

SWARNENDU TRIPATHI

Department of Physics
Kent State University
Kent, OH 44242-0001

Lab Phone: (330) 672-9515
Fax: (330) 672-2959
E-mail: stripath@kent.edu
<http://www.personal.kent.edu/~stripath/>

Academic Preparation

Kent State University, Physics, Ph.D., Summer 2010 (expected).
Kent State University, Physics, M.A., 2006.
Indian Institute of Technology Bombay, Materials Sc., M.Tech., 2004.
University of Pune, Physics, M.Sc., 2002.
St. Xavier's College, University of Calcutta, Physics, B.Sc., 2000.

Research Experience

Ph.D. Thesis Summer 2006-Present
Prof. J. J. Portman Kent State University
Coarse-grained modeling of protein functional transitions.

M.Tech. Dissertation Spring 2003-Spring 2004
Prof. R. O. Dusane and Prof. N. Venkataramani Indian Institute of Technology Bombay
Fabrication of hotwire chemical vapor deposited microcrystalline silicon thin film transistor.

M.Sc. Project Fall 2001-Spring 2002
Prof. V. N. Bhorashkar University of Pune
Irradiation effect of MeV energy electrons on polyimide.

Other Research Experience

Research Assistantship Summer 2008
Prof. J. J. Portman Kent State University
Molecular dynamics simulation study of G-quadruplex.

Research Project Fall 2005-Spring 2006
Prof. J. J. Portman Kent State University
Study of protein folding/unfolding using Langevin dynamics in a coarse-grained variational model.

Summer Project Summer 2005
Prof. J. T. Gleeson Kent State University
Computational study of Fredericks transitions in nematic liquid crystals.

Publications (most related to this proposal)

1. "Interplay among topology, plasticity and energetics of functional transitions of the calmodulin domains," S. Tripathi and J. J. Portman, *In Preparation* (2009).
2. "Inherent flexibility determines the transition mechanisms of the EF-hands of calmodulin," S. Tripathi and J. J. Portman, *Proc. Natl. Acad. Sci. USA*, 106, 2104-2109 (2009).
3. "Inherent flexibility and protein function: The open/closed conformational transition in the N-terminal domain of calmodulin," S. Tripathi and J. J. Portman, *J. Chem. Phys.*, 128, 205104 (2008) (Evaluated by Prof. M. Gruebele in *Faculty of 1000 Biology*).

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Other Publications

1. “AMPS-1D simulation studies of electronic transport in n^+ - μ c-Si:H thin films,” S. Tripathi and R. O. Dusane, *J. Non-Cryst. Solids*, 352, 1105-1108 (2006).
2. “One dimensional simulation study of microcrystalline silicon thin films for solar cell and thin film transistor applications using AMPS-1D,” S. Tripathi, N. Venkataramani, R. O. Dusane and B. Schroeder, *Thin Solid Films*, 501, 295-298 (2006).

Conferences and Presentations

1. “The inter-relationship between flexibility and stability in protein conformational transitions,” S. Tripathi and J. J. Portman, *Gordon Research Conference on Protein Folding Dynamics*, Ventura Beach Marriott, Ventura, CA, January 10-15, 2010 (Poster).
2. “Inherent flexibility and partial unfolding in protein conformational transitions,” S. Tripathi and J. J. Portman, *Integrating Physics, Chemistry, Mathematics and Biology to Understand Living Systems*, Bose Institute, Kolkata, India, Dec 4-6, 2008 (Poster).
3. “Conformational transitions in the EF-hands of calmodulin: Function by cracking,” S. Tripathi and J. J. Portman, *Gordon Research Conference on Biopolymers*, Salve Regina University, Newport, RI, June 8-13, 2008 (Poster).
4. “Inherent flexibility and conformational transition in calmodulin N-terminal domain from variational approach,” S. Tripathi and J. J. Portman, *2nd ICAM-FAPERJ Spring School on Biological Physics*, Rio de Janeiro, Brazil, March 16-21, 2008 (Poster).
5. “Inherent flexibility and conformational transition in calmodulin N-terminal domain from variational approach,” S. Tripathi and J. J. Portman, *5th Annual Meeting of the Biophysical Society*, Long Beach, California, February 2–6, 2008 (Poster).

Schools and Workshops

1. *2nd ICAM-FAPERJ Spring School on Biological Physics*, Rio de Janeiro, Brazil, March 16-21, 2008.
2. *5th School on The Physics of Beams*, Raja Ramanna Center for Advanced Technology, Department of Atomic Energy, Indore, India, December 25, 2000–January 5, 2001.

Teaching Experience

- Teaching Assistant, *Advanced and Intermediate Physics Laboratory*, Kent State University, Fall 2005–Fall 2009.
- Instructor, *General College Physics Laboratory I and II*, Kent State University, Summer 2008 and 2009.
- Teaching Assistant, *General University Physics I and II*, Kent State University, Fall 2004 and Spring 2005.
- Teaching Assistant, *Introduction to Electrical Materials (M.Tech. Course)*, Indian Institute of Technology Bombay, Spring 2001 and 2002.
- Teaching Assistant, *Introduction to Materials Science (B.Tech. Course)*, Indian Institute of Technology Bombay, Fall 2001 and 2002.

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Skills

Molecular Dynamics Simulations: GROMACS, CafeMol, AMBER
Programming Languages: Fortran90, Fortran77, L^AT_EX, Awk, Matlab
Operating Systems: Linux, MacOS X, Windows XP
Softwares: VMD, Adobe Illustrator, Adobe Photoshop

Professional Memberships

American Physical Society
Biophysical Society
Institute for Complex Adaptive Matter

Honors and Awards

Domestic Junior Travel Award from *Institute for Complex Adaptive Matter*, 2010.
International Junior Travel Award from *Institute for Complex Adaptive Matter*, 2008.
Selected as a Junior Scientific Officer at *Hindustan Unilever Research Center, India*, 2002.
All India Rank 42 in *Graduate Aptitude Test in Engineering (Physics)*, 2002.
All India Rank 78 in *Joint Entrance Screening Test (Physics)*, 2002.
Scholarship from *DGP Hinoday Industries, Hitachi Metals, India*, 2001–2002.

References

Prof. John J. Portman Department of Physics Kent State University Kent, OH 44242	Phone: (330) 672-9518 Fax: (330) 672-2959 E-mail: jportman@kent.edu
Prof. James T. Gleeson Department of Physics Kent State University Kent, OH 44242	Phone: (330) 672-9592 Fax: (330) 672-2959 E-mail: jgleeson@kent.edu
Prof. Robin L. B. Selinger Liquid Crystal Institute Chemical Physics Program Kent State University Kent, Ohio 44242	Phone: (330) 672-1582 Fax: (330) 672-2796 E-mail: rselinge@kent.edu