CURRICULUM VITAE

Pallavi Debnath

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EDUCATIONAL QUALIFICATIONS

2006	PhD, Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, India Thesis advisor: Prof. B. J. Cherayil
2000	M.Sc. in Chemistry, University of Roorkee (presently Indian Institute of Technology-Roorkee), Roorkee, India
1998	B.Sc. in Chemistry, Utkal University, Bhubaneshwar, India

POSITIONS HELD

Mar 2011 - Present	Assistant Professor, Department of Chemistry, Indian Institute of Technology Roorkee, Roorkee, India
2010 - Mar 2011	Postdoctoral Fellow with Prof. S. M. Bhattacharjee at Institute of Physics, Bhubaneswar, India
Sep 2009 - Dec 2009	Postdoctoral Research Associate at Max Planck Institute of Colloids and Interfaces, Potsdam, Germany
Mar 2008 - Aug 2009	Alexander von Humboldt Research Fellow Academic Hosts: Prof. Dr. R. Lipowsky and Prof. Dr. J. Kierfeld Host Institute: Max Planck Institute of Colloids and Interfaces, Potsdam, Germany

Apr 2006 - Jan 2008 Postdoctoral Research Associate with Prof. M. G. Guenza, Department of Chemistry and Institute of Theoretical Science, University of Oregon, Eugene, United States

HONOURS AND DISTINCTIONS

2008-2009 Alexander von Humboldt Research Fellowship
Academic Hosts: Prof. Dr. R. Lipowsky and Prof. Dr. J. Kierfeld
Host Institute: Max Planck Institute of Colloids and Interfaces, Potsdam, Germany

2002-2005 Senior Research Fellow
Council of Scientific and Industrial Research, India

2000-2002 Junior Research Fellow
Council of Scientific and Industrial Research, India

STUDENT SUPERVISON

PhD Sapna
Thesis Title: Computational studies of optical Properties of some silicon nanostructures
Status: Defended and Provisional degree awarded December, 2018
Supervisors: Prof. P. P. Thankachan and Prof. Pallavi Debnath

Rupam Borah
Thesis Title: A Few problems in polymer dynamics
Status: Degree Awarded 2017

Varun
Thesis Title: Theoretical investigations on non-linear optical properties of selected organic molecules
Status: Degree Awarded 2017
My role: Caretaker supervisor

Nabi Ahamad
Area of Research: Cooperative Dynamics in Polymer Melts
Status: Ongoing

Prakhar Shukla
Area of Research: Theoretical Chemistry
Status: Ongoing

Neha Pathak
Area of Research: Polymer Dynamics
Status: Ongoing

Garima
Area of Research: Statistical Mechanics of Polymers
Status: Ongoing

M.Sc.

Priyanka Yadav
Project Title (tentative): Path Integral calculations in polymers
Status: Ongoing

Kunwar Avinash
Project Title: Analytic Treatment of the Dynamics in Model Polymer Systems
Status: Submitted in Apr. 2018

Anurag Singh
Project Title: Robust implementation of algorithms to characterize topology in DNA
Status: Submitted in Apr. 2017

Rahul Kumar
Project Title: Algorithms of topological invariants for 3_1 and 5_2 knots
Status: Submitted in Apr. 2016

Swati Verma
Project Area: Modelling Polymer under Tension
Status: Submitted in Apr. 2016

Nidhi
Project Title: Characterization of DNA Topology By Topological invariants
Status: Submitted in Apr. 2015

Sourabh Kumar
Project Title: Study of knots and links in polymers
Status: Submitted Apr. 2014

Manasi Roy
Project Title: Electronic structure calculations of sulphur nitrides
Status: Submitted Apr. 2012

M.Tech. Shivam Gupta
Project Title (Tentative): Dynamics in model polymer systems
Status: Ongoing

Avnish Kumar
Project Title: Synthesis, characterization and catalytic activity of iron oxides
Status: Submitted in Jun. 2013

Subodh Kumar
Project Title: Rupture dynamics in polymers with interconnecting bonds
Status: Submitted in Jun. 2012

LIST OF PUBLICATIONS

Submitted **Theory of dynamics in polymer liquids: Analytical formulation based on diffusion of Rouse modes in crowded environment**
N. Ahamad and P. Debnath

Peer–Reviewed **Structural, electronic and optical properties of model silicon quantum dots: A computational study**
S. Bondwal, P. Debnath and P. P. Thankachan
Physica E: Low-dimensional Systems and Nanostructures, **103**, 194 (2018)

Investigation of Dynamical Heterogeneities in Polymer Melts
R. Borah, N. Ahamad and P. Debnath
Current science, **113**, 1974 (2017)

Rupture dynamics in model polymer systems
R. Borah and P. Debnath
Soft Matter, **12**, 4406 (2016)

Cooperative dynamics in polymer melts from the unentangled to the entangled regime
P. Debnath and M. G. Guenza
Phil. Mag. **88**, 4131 (2008)

Multiple time scale fluctuations in a semiflexible polymer: a one dimensional generalized Langevin equation treatment
P. Debnath, W. Min, X. S. Xie, and B. J. Cherayil
J. Chem. Phys. **123**, 204903 (2005)

Dynamics of chain closure: Approximate treatment of nonlocal interactions
P. Debnath and B. J. Cherayil
J. Chem. Phys. **120**, 2482 (2004)

Semiflexible random A–B block copolymers under tension
P. Debnath and B. J. Cherayil
J. Chem. Phys. **118**, 1970 (2003)

Conformational properties of randomly flexible heteropolymers
P. Debnath and B. J. Cherayil
J. Chem. Phys. **116**, 4330 (2002)

CONTRIBUTED TALKS

1. **Contributory Talk**
   Conference on DNA Physics, BITS Pilani, India
   March 9-11, 2017

2. **Invited Talk**
   15th Indian Theoretical Chemistry Symposium, Hyderabad, India
   December 14-17, 2016

3. **Few Problems in Polymer Dynamics**
   Indian Physics Association, Roorkee Chapter, Lecture Series
   April 11, 2014

4. **Polymer Friction: A many-body interaction problem**
   Internal workshop, Theory Division, Max-Planck Institute of Colloids and Interfaces, Potsdam, Germany
   November 16-19, 2009

5. **Polymer Friction by bond rupture**
   Departmental Retreat, Department of Theory and Bio-Systems, Max-Planck Institute of Colloids and Interfaces, Schloss Ringberg, Germany
   March 1-6, 2009

6. **Theory of Sliding Polymer Friction**
   Internal workshop, Theory Division, Max-Planck Institute of Colloids and Interfaces, Potsdam, Germany
   November 2008

7. **Statistical mechanical models of structure and dynamics of macromolecules**
   Thesis Colloquium, Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, India
   October 2005

POSTER PRESENTATIONS

1. **Theory of Single Polymer Friction**
   Humboldt Network Meeting, Berlin, Germany
   April 23-25, 2008

2. **Heterogeneous Dynamics in Entangled and Unentangled Polymer Melts**
   Gordon Research Conference on Liquids, Chemistry and Physics Of,
   Holderness School, Holderness, NH, United States
   July 29 - August 3, 2007

3. **Heterogeneous Dynamics in Polymer Melts**
   Graduate Visitation Weekend poster session, Department of Chemistry, University of Oregon, OR, United States
   March 2, 2007

4. **Multiple time scale dynamics of distance fluctuations in a semiflexible polymer**
   Gordon Research Conference on Polymer Physics
   Connecticut College, New London, CT, United States
   July 23-29, 2006