

CURRICULUM VITAE

Pallavi Debnath

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<https://www.iitr.ac.in/departments/CY/pages/People+Faculty+pdebhfcy.html>

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, Bhubaneswar, India

POSITIONS HELD

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

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

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 SUPERVISION

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

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

Prakhar Shukla
Area of Research: Theoretical Chemistry
Status: Ongoing

M.Sc. 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. 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

Peer— **Investigation of Dynamical Heterogeneities in Polymer**
Reviewed **Melts**

R. Borah, N. Ahamad and P. Debnath

Current Science, **113**, 1974 (2017).

Rupture dynamics of 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 non-local 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