

# **CURRICULUM VITAE**

**Pallavi Debnath**

Address: Department of Chemistry,  
Indian Institute of Technology Roorkee,  
Roorkee-247667, Uttarakhand, INDIA.  
Phone: + 91 1332 285445 (Office)  
e-mail: pdebhfcy@iitr.ac.in  
Nationality: Indian

## **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, Depart-  
- Jan 2008     ment 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 SUPERVISION**

PhD     Rupam Borah  
Thesis Title: A Few problems in polymer dynamics  
Status: Defended Jan. 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. 2014

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— **Rupture dynamics of model polymer systems**  
Reviewed 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