

BIO SKETCH

Ashis Mukhopadhyay

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A. Appointment & Professional preparation

| | | |
|---|------------------------------|----------------------|
| Wayne State University | Associate Professor, Physics | August, 2008-Present |
| Wayne State University | Assistant Professor, Physics | 2003-2008 |
| University of Illinois-Urbana Champaign | | |
| Materials Sci. and Eng. | Research Associate | 2000-2003 |
| Kansas State University | Physics | Ph.D 2000 |

B. Research

Current research: Soft matter and complex fluids, self-assembly, polymeric and biomolecular systems, diffusion and transport.

Post-doctoral research: Confined fluids, development of spectroscopy and single-molecule Imaging. Adviser-Prof. Steve Granick.

Ph.D research: Adsorption and wetting. Adviser-Prof. Bruce Law.

C. Guest appointment

University of Michigan, Ann Arbor Visiting Faculty Jan 2017-Dec 2017
Research: Microrheology, Self-assembly. Host: Prof. Mike Solomon

Max Planck Institute for
Polymer Research (Mainz, Germany) Guest Scientist Jan 2010-Mar 2010
Research: Rheology of liquid-liquid interface. Host: Prof. Hans-Jürgen Butt

Max Planck Institute for Dynamics &
Self-Organization (Göttingen, Germany) Guest Scientist Mar 2010-June 2010
Research: Characterization of membrane pores using confocal microscopy. Host: Stephan Harminghaus.

D. Current Grant

Transport of Virus-like Nanoparticles through Mucus. National Science Foundation, 8/1/2021
7/31/2024

E. Significant Publications (Ten listed)

1. *Curved Colloidal Crystals of Discoids at near-Critical Liquid-Liquid Interface*. A Mukhopadhyay, *Soft Matter* 17, 6942-6951 (2021). Cover-page article.

2. *Brownian Diffusion of Individual Janus Nanoparticles at Water/Oil Interfaces*. D Wang, YL Zhu, Y Zhao, CY Li, A Mukhopadhyay, ZY Sun, K Koynov, Hans-Jürgen Butt ACS Nano 14, 10095-10103 (2020).
3. *Nanoparticle Diffusion within Dilute and Semidilute Xanthan Solutions*. Kavindya K. Senanayake and Ashis Mukhopadhyay. Langmuir, **35**, 7978-7984 (2019).
4. Diffusion of Nanoparticles within a Semidilute Polyelectrolyte Solution. Kavindya K. Senanayake, Namita Shoken, Ehsan Akbari Fakhrabadi, Matthew W. Liberatore, and Ashis Mukhopadhyay. Soft Matter 15, 7616-7622 (2019).
5. Diffusion of Nanoparticles in Entangled Poly(vinyl alcohol) Solutions and Gels. Kavindya K. Senanayake, Ehsan Akbari Fakhrabadi, Matthew W. Liberatore, and Ashis Mukhopadhyay. Macromolecules, 52, 787-795 (2019).
6. The Size-Effect of Nanoparticle Diffusion in a Polymer Melt. Christopher A. Grabowski and Ashis Mukhopadhyay. Macromolecules, 47, 7238 (2014)
7. The Conjugation of Gold Nanorods with Bovine Serum Albumin Protein. Sharmin Alam and Ashis Mukhopadhyay. J. Phys. Chem. C, 118, 27459 (2014).
8. Nanopatterning Effects on Astrocyte Reactivity. E. S. Ereifej, H. W. Matthew, G. Newaz, A. Mukhopadhyay, G. Auner, I. Salakhutdinov, and P. J. VandeVord, P. J. Biomed. Mater. Res. doi: 10.1002/jbm.a.34480 (2012).
9. Diffusion of Nanoparticles in Semidilute Polymer Solutions: The Effect of Different Length Scales. Indermeet Kohli and Ashis Mukhopadhyay. Macromolecules 45, 6143-6149 (2012).
10. *Effect of Surface Curvature on Critical Adsorption*. R. Omari, C. Grabowski, and A. Mukhopadhyay. Physical Review Letters 103, 225705 (2009).

Invited Review Article

A. Mukhopadhyay and S. Granick, "*Micro- and Nanorheology*." Current Opinion in Colloid and Interface Science **6**, 423-429 (2001).

Book Chapter

Y. Zhu, A. Mukhopadhyay, and S. Granick, "*Interfacial Forces and Spectroscopy of Confined Fluids, Nanotechnology Handbook*" August 2006 (2nd ed., Springer Verlag, editor: Bharat Bhusan)

E. Thesis Advisor and Postgraduate-scholar sponsor:

Graduate Students Advised: Chris Grabowski (PhD 2009, Air Force Research Lab), Rami Omari (Ph.D 2011, Lecturer, Grand Valley State University), Venkatesh Subba Rao (PhD 2011,

co-advised with Hoffmann, Micron Inc.), Indermeet Kohli (PhD 2013, Research Scientists, Henry Ford Health System), Sharmin Alam (PhD 2015, Intel Corp.), Namita Shokeen (Ph.D, Intel Corp.), Kavindya Senanayake (PhD, Assistant Professor, Saginaw Valley State University), Mircea Pantea (Post Doc 2006-08, jointly with Hoffmann, University of Windsor)

F. Synergistic Activities

- National Science Foundation: Adhoc and panel reviewer (Multiple times)
- Petroleum Research Fund (ACS): Adhoc reviewer
- Reviewer for journals including *Macromolecules*, *Langmuir*, *Nanoletters*, *Soft Matter*, *Polymer*, *Journal of Physical Chemistry*, *Journal of Chemical Physics*, etc.
- Consultant (Artificial Cell Technology, Connecticut).

- Public understanding of Science:

Research advisor to NSF Research Experience for undergraduate students.

K12 outreach activities to Detroit Public School students.

Judge for Junior Science and Humanities Symposium, MI (Multiple years)

Mentored high school students from Detroit Public Schools for their projects.

Involved science teachers from non-Ph.D granting institutions

Coaching of students for Science Olympiad