

Curriculum Vitae

Siddhartha Das, PhD, FRSC, FInstP, FIET

Notarization. I have read the following and certify that this *curriculum vitae* is a current and accurate statement of my professional record.

Signature: 

Date: October 30, 2022

I. Personal Information

I.A. Contact Information

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Last Name: Das

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Office Address: 3163, Glenn L. Martin Hall, Bldg. 088, Department of Mechanical Engineering, University of Maryland, College Park, MD, 20742

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Department Webpage: www.enme.umd.edu/faculty/das

Research Group Webpage: www.smiel.umd.edu

I.B. Academic Appointments at University of Maryland (UMD)

Associate Professor, Department of Mechanical Engineering,
A. James Clark School of Engineering August 23, 2019
onwards

Assistant Professor, Department of Mechanical Engineering,
A. James Clark School of Engineering March 1, 2014 –
August 22, 2019

I.C. Other Employment

Assistant Professor, Department of Mechanical Engineering,
University of Alberta, Canada September, 2013 –
February, 2014

Banting Postdoctoral Fellow, Department of Mechanical
Engineering, University of Alberta, Canada April, 2012 –
August, 2013

Postdoctoral Fellow, Department of Mechanical Engineering,
University of Alberta, Canada December, 2011 –
March, 2012

Postdoctoral Researcher, Physics of Fluids Group, University
of Twente October, 2009 –
October, 2010

I.D. Educational Background

Ph.D. – Indian Institute of Technology, Kharagpur
Department of Mechanical Engineering April, 2010*

B.Tech. (Hons.) – Indian Institute of Technology,
Kharagpur, Department of Mechanical Engineering May, 2005

I.E. Professional Memberships

American Physical Society	August, 2013 – Present
Materials Research Society	November, 2015 – Present
American Society of Mechanical Engineering	April, 2019 – Present
Royal Society of Chemistry	September 2019 – Present

All the formalities required for receiving the PhD degree were completed on **April, 2010, while the degree was formally awarded on **July, 2010**.*

II. Research, Scholarly, Creative and/or Professional Activities

II.A. Book Chapters

1. **S. Das**, T. Das, and S. Chakraborty, Microfluidics based DNA hybridization, Microfluidics and Microscale Transport Processes, 2012, (Editor: S. Chakraborty) Taylor and Francis.
2. **S. Das**, J. Chakraborty, and S. Chakraborty, Electrokinetics in narrow confinements, Microfluidics and Microscale Transport Processes, 2012, (Editor: S. Chakraborty) Taylor and Francis.
3. **S. Das** and S. Chakraborty, Polymer transport in nanochannels, Microfluidics and Nanofluidics Handbook: Fabrication, Implementation and Applications-Vol II, 2011, (Editors: S. K. Mitra and S. Chakraborty), Taylor and Francis.

II.B. Refereed Journal Articles

(# Indicates the Graduate Students or Postdocs of Dr. Das at UMD; \$ Indicates the Undergraduate Students or Summer Interns supervised by Dr. Das at UMD; *Indicates corresponding authorship)

Total Citations: 6722, h-index: 38, i10-index: 109 (Google Scholar)

Google Scholar Link: <http://scholar.google.ca/citations?user=HPUsSB0AAAAJ>

Total Citations: 7163, h-index: 35 (ResearcherID.com)

ResearcherID Link: <https://www.webofscience.com/wos/author/record/83504>

1. Q. Dong, X. Zhang, J. Qian, S. He, Y. Mao, A. H. Brozena, Y. Zhang, T. P. Pollard, O. A. Borodin, #Y. Wang, #B. S. Chava, **S. Das**, P. Zavalij, C. U. Segre, D. Zhu, L. Xu, Y. Liang, Y. Yao, R. M. Briber, T. Li, and L. Hu, "A Cellulose-Derived Supramolecule for Fast Ion Transport." *Science Advances*, 2022 (Accepted for Publication).
2. #V. S. Sivasankar, D. R. Hines, and **S. Das***, "Numerical Study of the Coalescence and Mixing of Drops of Different Polymeric Materials." *Langmuir*, 2022 (Accepted for Publication).
3. #B. Zhao, #V. S. Sivasankar, #S. K. Subudhi, S. Sinha, A. Dasgupta, and **S. Das***, "Applications, Fluid Mechanics, and Colloidal Science of Carbon-Nanotube-based 3D Printable Inks." *Nanoscale*, 2022, Vol. 14, pp. 14858-14894
4. #S. A. Etha, #T. H. Pial, and **S. Das***, "Extensive Stable Physical Contacts Between a Nanoparticle and a Highly Repulsive Polymeric Layer." *The Journal of Physical Chemistry B*, 2022, Vol. 126, pp. 5715-5725.
5. #R. Ishraaq, #T. H. Pial, and **S. Das***, "Interplay of Local Heating, Nanoconfinement, and Tunable Liquid-Wall Interactions Drive Rapid Imbibition and Pronounced Mixing Between Two Immiscible Liquids." *The Journal of Physical Chemistry Letters*, 2022, Vol. 13, pp. 5137-5142.

6. #V. S. Sivasankar, #Y. Wang, R. Natu, D. Porter, L. Herbertson, B. Cavern, S. Guha*, and **S. Das***, “Two-Phase Particle-Liquid Transport in Curved Microchannels: Effect of Particle Volume Fraction and Particle Size in Dean Flow.” *Physics of Fluids*, 2022, Vol. 34, pp. 053304.
7. #T. H. Pial, #M. Prajapati, #B. S. Chava, #H. S. Sachar, and **S. Das***, “Charge-Density-Specific Response of Grafted Polyelectrolytes to Electric Fields: Bending or Tilting?” *Macromolecules*, 2022, Vol. 55, pp. 2413-2423.
8. #A. Dhamsania, #W. Mah, #A. Sivarajan, #J. Ting, #S. Chung, #E. Carlson, #A. Wang, #G. Lee, #B. Huynh, #A. Chen, #L. Mueller, #C. Kim, #S. K. Subudhi, #B. Zhao, #B. S. Chava, and **S. Das***, “Physically Soft Magnetic Films and Devices: Fabrication, Properties, Printability, and Applications.” *Journal of Materials Chemistry C*, 2022, Vol. 10, pp. 6563-6589.
9. #V. S. Sivasankar, M. Prajapati, and **S. Das***, Analytical Solutions for Non-Ionic and Ionic Diffusioosmotic Transport at Soft and Porous Interfaces. *Physics of Fluids*, 2022, Vol. 34, pp. 022102.
10. #B. S. Chava, E. K. Thorn, and **S. Das***, Atomistic Explorations of Mechanisms Dictating the Shear Thinning Behavior and 3D Printability of Graphene Flake Infused Epoxy Inks. *Physical Chemistry Chemical Physics*, 2021, Vol. 23, pp. 24634-24645.
11. #V. S. Sivasankar, #S. A. Etha, D. R. Hines, and **S. Das***, Coalescence of Microscopic Polymeric Drops: Effect of Drop Impact Velocities. *Langmuir*, 2021, Vol. 37, pp. 13512-13526.
12. #H. S. Sachar, #T. H. Pial, #V. S. Sivasankar, and **S. Das***, Simultaneous Energy Generation and Flow Enhancement (Electroslippage Effect) in Polyelectrolyte Brush Functionalized Nanochannels. *ACS Nano*, 2021, Vol. 15, pp. 17337-17347.
13. D. R. Hines*, #Y. Gu, A. A. Martin, P. Li, J. Fleischer, A. Clough-Paez, G. Stackhouse, A. Dasgupta, and **S. Das***, Considerations of Aerosol-Jet Printing for the Fabrication of Printed Hybrid Electronic Circuits. *Additive Manufacturing*, 2021, Vol. 43, pp. 102325.
14. W. Kong, C. Chen, G. Chen, C. Wang, D. Liu, **S. Das**, #G. Chen, T. Li, J. Li, Y. Liu, Z. Li, B. C. Clifford, and L. Hu, Wood Ionic Cable. *Small*, 2021, Vol. 17, pp. 2008200.
15. #H. S. Sachar, #B. S. Chava, #T. H. Pial, and ***S. Das**, All-Atom Molecular Dynamics Simulations of the Temperature Response of Densely Grafted Polyelectrolyte Brushes. *Macromolecules*, 2021, Vol. 54, 6342-6354.
16. #B. S. Chava, #Y. Wang, and ***S. Das**, Boron-Nitride-Nanotube-Salt-Water Hybrid: Towards Zero-Dimensional Liquid Water and Highly Trapped Immobile Single Anions Inside One-Dimensional Nanostructures. *The Journal of Physical Chemistry C*, 2021, Vol. 125, pp. 14006-14013.
17. #C. Yi, D. Park, R. Fedderwitz, C. Ding, G-Q. Lu, J. Fleischer, P. Li, P. Kofinas, ***S. Das**, and ***D. Hines***, “Fully Printed Resonance-Free Broadband Conical Inductors Using Engineered Magnetic Inks.” *Additive Manufacturing*, 2021, Vol. 44, pp. 102034.
18. #T. H. Pial, #H. S. Sachar, and ***S. Das**, Quantification of Mono- and Multivalent Counterion-mediated Bridging in Polyelectrolyte Brushes. *Macromolecules*, 2021, Vol. 54, pp. 4154-4163.
19. #T. H. Pial, #H. S. Sachar, #P. R. Desai, and ***S. Das**, Overscreening, Coion-Dominated Electroosmosis, and Electric Field Strength Mediated Flow Reversal in

- Polyelectrolyte Brush Functionalized Nanochannels. *ACS Nano*, 2021, Vol. 15, pp. 6507-6516.
20. #V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and ***S. Das**, Thermoosmotic Transport in Nanochannels Grafted with pH-responsive Polyelectrolyte Brushes Modelled Using Augmented Strong Stretching Theory. *Journal of Fluid Mechanics*, 2021, Vol. 917, A31 (Selected as the Front Cover for the June 26, 2021 issue of the Journal of Fluid Mechanics).
 21. #B. Zhao, #V. S. Siavasankar, A Dasgupta, and ***S. Das**, Ultra-thin and Ultra-sensitive Printed Carbon-Nanotube-based Temperature Sensors Capable of Repeated Uses on Surfaces of Widely Varying Curvatures and Wettabilities. *ACS Applied Materials and Interfaces*, 2021, Vol. 13, pp. 10257-10270.
 22. #H. S. Sachar, #B. S. Chava, #T. H. Pial, and ***S. Das**, Hydrogen Bonding and its Effect on the Orientational Dynamics of Water Molecules inside Polyelectrolyte Brush-Induced Soft and Active Nanoconfinement. *Macromolecules*, 2021, Vol. 54, pp. 2011-2021.
 23. #S. A. Etha, #P. R. Desai, #H. S. Sachar, and ***S. Das**, "Wetting Dynamics on Solvophilic, Soft, Porous, and Responsive Surfaces." *Macromolecules*, 2021, Vol. 54, pp. 584-594.
 24. #H. Jing, #Y. Wang, #P. R. Desai, K. Ramamurthi, and ***S. Das**, "Lipid Flip-Flop and Desorption from Supported Lipid Bilayers is Independent of Curvature." *PLOS ONE*, 2020, Vol. 15, pp. e0244460.
 25. #B. S. Chava, #Y. Wang, #V. S. Sivasankar, and ***S. Das**, "Water-free Localization of Anion at Anode for Small Concentration Water-in-Salt Electrolytes Confined in Boron-Nitride Nanotube." *Cell Reports Physical Sciences*, 2020, Vol. 1, pp. 100246.
 26. #P. R. Desai, S. Brahmachari, J. F. Marko, ***S. Das**, and *K. C. Neuman, "Coarse-Grained Modelling of DNA Plectoneme Pinning in the Presence of Base-Pair Mismatches." *Nucleic Acids Research*, 2020, Vol. 48, pp. 10713-10725.
 27. #H. S. Sachar, #T. H. Pial, #B. S. Chava, and ***S. Das**, "All-atom Molecular Dynamics Simulations of Weak Polyionic Brushes: Influence of Charge Density on the Properties of Polyelectrolyte Chains, Brush-Supported Counterions, and Water Molecules." *Soft Matter*, 2020, Vol. 16, 7808-7822.
 28. #E. Wagemann, S. Misra, **S. Das**, and S. K. Mitra, "Quantifying water friction in misaligned graphene channels under Ångström confinements." *ACS Applied Materials and Interfaces*, 2020, Vol. 12, pp. 35757–35764.
 29. #V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and ***S. Das**, "Theoretical Study on the Massively Augmented Electroosmotic Water Transport in Polyelectrolyte Brush Functionalized Nanoslits." *Physical Review E*, 2020, Vol. 102, pp. 013103.
 30. #S. A. Etha, #V. S. Sivasankar, #H. S. Sachar, and ***S. Das**, "Strong Stretching Theory for pH-Responsive Polyelectrolyte Brushes in Large Salt Concentrations." *Physical Chemistry Chemical Physics*, 2020, Vol. 22, pp. 13536-13553 (Published as a part of PCCP Emerging Investigators 2020 Issue).
 31. #H. Jing, #Y. Wang, #P. R. Desai, K. S. Ramamurthi, and ***S. Das**, "Formation and Properties of Self-Assembled Nanoparticle-Supported Lipid Bilayer Probed Through Molecular Dynamics Simulations." *Langmuir*, 2020, Vol. 36, 5524–5533.
 32. #V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and ***S. Das**, "Ionic Diffusioosmotic Transport in Nanochannels Grafted with pH-responsive Polyelectrolyte Brushes

- Modelled Using Augmented Strong Stretching Theory.” *Physics of Fluids*, 2020, Vol. 32, 042003.
33. #E. Wagemann, #Y. Wang, **S. Das**, and S. K. Mitra, “On the Wetting Translucency of Hexagonal Boron Nitride.” *Physical Chemistry Chemical Physics*, 2020, Vol. 22, pp. 7710-7718.
 34. #H. S. Sachar, #T. H. Pial, #P. R. Desai, #S. A. Etha, #Y. Wang, P. W. Chung, and ***S. Das**, “Densely Grafted Polyelectrolyte Brushes Trigger “Water-in-Salt” like Scenarios and Ultraconfinement Effect.” *Matter*, 2020, Vol. 2, pp. 1509-1521.
 35. S. He, C. Chen, #G. Chen, J. Dai, J. Song, F. Jiang, H. Xie, Y. Yao, C. Jia, E. Hitz, B. Liu, F. Chen, A. Gong, **S. Das**, and L. Hu, “A High-Performance, Scalable Wood-based Filtration Device with a Reversed-Tree Design.” *Chemistry of Materials*, 2020, Vol. 32, pp. 1887-1895.
 36. #S. A. Etha, #V. S. Sivasankar, #H. S. Sachar, and ***S. Das**, “Coating for Preventing Non-Specific Adhesion Mediated Biofouling in Salty Systems: Effect of the Electrostatic and van der Waals Interactions.” *Electrophoresis*, 2020, Vol. 41, pp. 657-665.
 37. #V. S. Sivasankar, #H. S. Sachar, #S. Sinha, D. R. Hines, and ***S. Das**, “3D Printed Microdroplet Curing: Unravelling the Physics of On-spot Photopolymerization.” *ACS Applied Polymer Materials*, 2020, Vol. 2, pp. 966-976.
 38. #E. Wagemann, #Y. Wang, **S. Das**, and S. K. Mitra, “Wettability of Nanostructured Hexagonal Boron Nitride Surfaces: Molecular Dynamics Insights on the Effect of Wetting Anisotropy.” *Physical Chemistry Chemical Physics*, 2020, Vol. 22, 2499-2497.
 39. W. Gan, C. Chen, Z. Wang, Y. Pei, W. Ping, S. Xiao, J. Dai, Y. Yao, S. He, #B. Zhao, **S. Das**, B. Yang, P. B. Sunderland, and L. Hu, “Fire-Resistant Structural Material Enabled by An Anisotropic Thermally Conductive Hexagonal Boron Nitride Coating.” *Advanced Functional Materials*, 2020, Vol. 30, pp. 1909196.
 40. #N. Dalal, #Y. Gu, #G. Chen, D. R. Hines, A. Dasgupta, and **S. Das**, Effects of Gas Flow Rates on Quality of Aerosol Jet Printed Traces with Nanoparticle Conducting Ink. *ASME Journal of Electronic Packaging* 2020, Vol. 142, pp. 011012.
 41. #T. H. Pial, #Y. Wang, and ***S. Das**, Non-Monotonic Dependence of Fluid Dissipation on Fluid Density in Fluid-Coupled Nanoresonators, *Applied Physics Letters* 2019, Vol. 115, pp. 251601.
 42. #B. Zhao, #Y. Wang, #S. Sinha, C. Chen, D. Liu, A. Dasgupta, L. Hu, and ***S. Das**, Shape-driven Arrest of Coffee Stain Effect Drives the Fabrication of Carbon-Nanotube-Graphene-Oxide Inks for Printing Embedded Structures and Temperature Sensors. *Nanoscale* 2019, Vol. 11, pp. 23402–23415.
 43. #H. S. Sachar, #V. S. Sivasankar, #S. A. Etha, G. Chen, and ***S. Das**, Ionic Current in Nanochannels Grafted with pH-Responsive Polyelectrolyte Brushes Modelled Using Augmented Strong Stretching Theory. *Electrophoresis* 2019, DOI: 10.1002/elps.201900248.
 44. #Y. Gu, D. Park, S. Gonya, J. Jendrisak, **S. Das**, and D. R. Hines, Direct-write Printed Broadband Inductors. *Additive Manufacturing* 2019, Vol. 30, pp. 100843.
 45. #N. Dalal, #Y. Gu, D. R. Hines, A. Dasgupta, and ***S. Das**, Cracks in the 3D-Printed Conductive Traces of Silver Nanoparticle Ink. *Journal of Micromechanics and Microengineering*, 2019, Vol. 29, pp. 097001.

46. #H. S. Sachar, #V. S. Sivasankar, and ***S. Das**, Electrokinetic Energy Conversion in Nanochannels Grafted with pH-responsive Polyelectrolyte Brushes Modelled Using Augmented Strong Stretching Theory. *Soft Matter*, 2019, Vol. 15, pp. 5973-5986.
47. #P. R. Desai, #Y. Wang, #H. S. Sachar, #H. Jing, #S. Sinha, and ***S. Das**, Supersolvophobic Soft Wetting: Nanoscale Elastocapillarity, Adhesion, and Retention of a Drop Behaving as a Nanoparticle. *Matter*, Vol. 1, pp. 1262-1273 (2019).
48. K. Jiang, M. F. Khan, J. Thomas, #P. R. Desai, A. Phani, ***S. Das**, and T. Thundat, Thermomechanical Responses of Microfluidic Cantilever Capture DNA Melting and Properties of DNA Pre-melting States Using Picolitres of DNA Solution. *Applied Physics Letters*, 2019, Vol. 114, pp. 173703.
49. S. He, C. Chen, Y. Kuang, R. Mi, Y. Liu, Y. Pei, W. Kong, W. Gan, H. Xie, E. Hitz, C. Jia, X. Chen, A. Gong, J. Liao, J. Li, Z. J. Ren, B. Yang, **S. Das**, and Liangbing Hu, Nature-Inspired Salt Resistant Bimodal Porous Solar Evaporator for Efficient and Stable Water Desalination. *Energy and Environmental Science*, 2019, Vol. 12, pp. 1558-1567.
50. #H. S. Sachar, #V. S. Sivasankar, and ***S. Das**, Electrostatics and Interactions of an Ionizable Silica Nanoparticle Approaching a Plasma Membrane. *Langmuir* 2019, Vol. 35, pp. 4171-4181.
51. Y. Kuang, C. Chen, #G. Chen, Y. Pei, G. Pastel, C. Jia, J. Song, R. Mi, B. Yang, **S. Das**, L. Hu, Bioinspired Solar-Heated Carbon Absorbent for Efficient Clean-Up of Highly Viscous Crude Oil. *Advanced Functional Materials* 2019, Vol. 29, pp. 1900162.
52. T. Li, X. Zhang, S. D. Lacey, R. Mi, X. Zhao, F. Jiang, J. Song, Z. Liu, #G. Chen, J. Dai, Y. Yao, **S. Das**, R. Yang, R. Briber, L. Hu, Cellulose Ionic Conductors with High Differential Thermal Voltage for Low-Grade Heat Harvesting. *Nature Materials* 2019, DOI: 10.1038/s41563-019-0315-6.
53. #H. Jing, #H. S. Sachar, #S. Sinha, and ***S. Das**, Interactions of Gold and Silica Nanoparticles with Plasma Membranes get Distinguished by the van der Waals Forces: Implications for Drug Delivery, Imaging, and Theranostics. *Colloids and Surfaces B: Biointerfaces*, 2019, Vol. 177, pp. 433-439.
54. #H. Jing, #P. R. Desai, #Y. Wang, K. Ramamurthi, and ***S. Das**, Nanovesicles versus Nanoparticle-Supported Lipid Bilayers: Massive Differences in Bilayer Structures and in Diffusivities of Lipid Molecules and Nanoconfined Water. *Langmuir*, 2019, Vol. 35, pp. 2702-2708.
55. #H. S. Sachar, #V. S. Sivasankar, and ***S. Das**, Revisiting the Strong Stretching Theory for pH-Responsive Polyelectrolyte Brushes: Effects of Consideration of Excluded Volume Interactions and an Expanded Form of the Mass Action Law. *Soft Matter*, 2019, Vol. 15, pp. 559-574.
56. #Y. Gu, D. Park, D. Bowen, ***S. Das**, and *D. R. Hines, Direct write printed, solid-core solenoid inductors with commercially relevant inductances. *Advanced Materials Technologies*, 2019, Vol. 4, pp. 1800312.
57. C. Wang, S. Wang, G. Chen#, W. Kong, W. Ping, J. Dai, G. Pastel, H. Xie, S. He, **S. Das**, and L. Hu, Flexible, Bio-Compatible Nanofluidic Sodium Ion Conductor. *Chemistry of Materials*, 2018, Vol. 98, pp. 7707–7713.
58. S. Karpitschka, **S. Das**, M. van Gorcum, H. Perrin, B. Andreotti, and J. H. Snoeijer, Soft Wetting: Models based on energy dissipation or on force balance are equivalent.

- Proceedings of the National Academy of Sciences, USA, 2018, Vol. 115, pp. E7233-E7233.
59. #R. S. Maheedhara, #H. S. Sachar, #H. Jing, and ***S. Das**, Ionic Diffusioosmosis in Nanochannels Grafted with End-Charged Polyelectrolyte Brushes. The Journal of Physical Chemistry B, 2018, Vol. 122, pp. 7450-7461.
 60. #Y. Wang, #K. Ahuja, #S. Sinha, #P. R. Desai, and ***S. Das**, Water-Holey-Graphene Interactions: Route to Highly Enhanced Water-Accessible Graphene Surface Area. ACS Applied Nano Materials, 2018, Vol. 1, 5907–5919.
 61. #Y. Wang, #S. Sinha, #P. R. Desai, #H. Jing, and ***S. Das**, Ion at air-water interface enhances capillary wave fluctuations: Energetics of ion adsorption. Journal of the American Chemical Society, 2018, Vol. 140, pp. 12853–12861.
 62. #G. Chen, #J. Patwary, #H. S. Sachar, and ***S. Das**, Electrokinetics in nanochannels grafted with poly-zwitterionic brushes. Microfluidics and Nanofluidics, 2018, Vol. 22, pp. 122.
 63. #R. S. Maheedhara, #H. Jing, #H. S. Sachar, and ***S. Das**, Highly enhanced liquid flows via thermoosmotic effects in soft and charged nanochannels. Physical Chemistry Chemical Physics, 2018, Vol. 20, pp. 24300-24316.
 64. #P. R. Desai and **S. Das**, Lubrication in polymer-brush bilayers in the weak interpenetration regime: Molecular dynamics simulations and scaling theories. Physical Review E, 2018, Vol. 98, pp. 022503(1-7).
 65. #S. Sinha, #H. S. Sachar, and ***S. Das**, Electrostatically motivated design of biomimetic nanoparticles: Promoting specific adhesion and preventing nonspecific adhesion simultaneously. Applied Physics Letters, 2018, Vol. 112, pp. 243702(1-5).
 66. #Y. Wang, #S. Sinha, #K. Ahuja, #P. R. Desai, J. Dai, L. Hu, and ***S. Das**, Dynamics of a Water Nanodrop Through a Holey Graphene Matrix: Role of Surface Functionalization, Capillarity, and Applied Forcing. The Journal of Physical Chemistry C, 2018, Vol. 122, pp. 12243-12250.
 67. #G. Chen, #H. S. Sachar, and ***S. Das**, Efficient Electrochemomechanical Energy Conversion in Nanochannels Grafted with End-charged Polyelectrolyte Brushes at Medium and High Salt Concentration. Soft Matter, 2018, Vol. 14, pp. 5246-5255.
 68. #S. Sinha, #H. Jing, #H. S. Sachar, and ***S. Das**, Surface charges promote nonspecific nanoparticle adhesion to stiffer membranes. Applied Physics Letters, 2018, Vol. 112, pp. 163702(1-5).
 69. #G. Chen, #Y. Gu, H. Tsang, *D. R. Hines, and ***S. Das**, The effect of droplet sizes on overspray in aerosol-jet printing. Advanced Engineering Materials, 2018, Vol. 20, pp. 1701084(1-13).
 70. #H. Jing and ***S. Das**, Theory of diffusioosmosis in a charged nanochannel. Physical Chemistry Chemical Physics, 2018, Vol. 20, pp. 10204-10212.
 71. #P. R. Desai, #S. Sinha, and ***S. Das**, Polyelectrolyte brush bilayers in weak interpenetration regime: Scaling theory and molecular dynamics simulations. Physical Review E, 2018, Vol. 97, pp. 032503(1-8).
 72. T. Li, H. Liu, X. Zhao, #G. Chen, J. Dai, G. Pastel, C. Jia, C. Chen, **S. Das**, R. Yang, and L. Hu, Scalable and Highly Efficient Mesoporous Wood-Based Solar Steam Generation Device: Localized Heat, Rapid Water Transport. Advanced Functional Materials, 2018, Vol. 28, pp. 1707134(1-8).

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74. #S. Sinha, #H. S. Sachar, and ***S. Das**, Effect of Plasma Membrane Semipermeability in Making the Membrane Electric Double Layer Capacitances Significant. *Langmuir*, 2018, Vol. 34, pp. 1760-1766.
75. H. Liu, C. Chen, #G. Chen, Y. Kuang, X. Zhao, J. Song, C. Jia, X. Xu, E. Hitz, H. Xie, S. Wang, F. Jiang, T. Li, Y. Li, A. Gong, R. Yang, **S. Das**, and L. Hu, High-Performance Solar Steam Device with Layered Channels: Artificial Tree with a Reversed Design. *Advanced Energy Materials*, 2018, Vol. 8, pp. 1701616(1-8).
76. #S. Sinha, #H. Jing, #H. S. Sachar, and ***S. Das**, Role of plasma membrane surface charges in dictating the feasibility of membrane-nanoparticle interactions. *Applied Physics Letters*, 2017, Vol. 111, pp. 263702(1-5).
77. C. Jia, Y. Li, Z. Yang, #G. Chen, Y. Yao, F. Jiang, Y. Kuang, G. Pastel, H. Xie, B. Yang, **S. Das**, and L. Hu, Rich Mesosstructures Derived from Natural Woods for Solar Steam Generation. *Joule*, 2017, Vol. 1, pp. 588–599.
78. #Y. Wang, #S. Sinha, L. Hu, and ***S. Das**, Interaction between a Water Drop and Holey Graphene: Retarded Imbibition and Generation of Novel Water-Graphene Wetting States. *Physical Chemistry Chemical Physics*, 2017, Vol. 19, 27421-27434.
79. \$M. Zhu, \$Y. Li, \$#G. Chen, Z. Yang, X. Luo, #Y. Wang, J. Dai, S. D. Lacey, C. Wang, C. Jia, J. Wan, Y. Yao, B. Yang, Z. Yu, ***S. Das**, *L. Hu, Tree-Inspired Design for High-Efficiency Water Extraction. *Advanced Materials*, 2017, Vol. 29, pp. 1704107(1-9) (\$: Co-first authors).
80. #Y. Gu, *D. R. Hines, V. Yun, M. Antoniak, and ***S. Das**, Aerosol-Jet Printed Fillets for Well-Formed Electrical Connections Between Different Leveled Surfaces. *Advanced Materials Technologies*, 2017, Vol. 2, pp. 1700178(1-9).
81. A. Pandey, S. Karpitschka, L. A. Lubbers, J. H. Weijis, L. Botto, **S. Das**, B. Andreotti, and J. H. Snoeijer, Dynamical Theory of the Inverted Cheerios Effect. *Soft Matter*, 2017, Vol. 13, 6000-6010.
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II.C. Published Conference Proceedings

II.C.1. Refereed Conference Proceedings

1. **S. Das**, S. Chakraborty, T. Thundat, and S. K. Mitra, Asphaltene microchannel transport and separation in presence of finite wall effects. *Proceedings of the 22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference, December 28-31, 2013, Indian Institute of Technology Kharagpur, India.*
2. D. Sarkar, **S. Das**, and S. K. Mitra, Effect of charge distribution at the three phase contact line for an electrolyte drop. *Proceedings of the ASME 2013 International Mechanical Engineering Congress and Exposition (IMECE 2013), (Paper No: 63357), November, 13–21, 2013, San Diego, California.*
3. P. R. Waghmare, **S. Das**, and S. K. Mitra, Drop deposition technique on low energy surface. *Proceedings of the ASME 2013 Fluids Engineering Division Summer Meeting, (Paper No: 16265), July 7–11, 2013, Incline Village, Nevada.*
4. A. Guha, **S. Das**, and S. K. Mitra, Streaming potential in a charged nanocapillary. *Proceedings of the 11th International Conference on Nanochannels, (Paper No: 6 73121), Microchannels, and Minichannels (ICNMM2013), June 16–19, 2013, Hokkaido University, Sapporo, Japan.*
5. **S. Das**, A. Guha, and S. K. Mitra, Electroviscous effects in charged nanocapillary. *Proceedings of the 24th Canadian Congress of Applied Mechanics (CANCAM 2013), (Paper No: 125), June 2–6, 2013, Saskatoon, Saskatchewan, Canada.*
6. P. Dubksy, **S. Das**, A. van den Berg, and J. C. T. Eijkel, Concentration polarization in nanochannel DNA electrophoresis. *Proceedings of the 15th International Conference on Miniaturized Systems for Chemistry and Life Sciences, October 2–6, 2011, Seattle, Washington.*
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8. **S. Das** and S. Chakraborty, Electroviscous effects in narrow fluidic confinements beyond the Debye-Hückel limits. *Proceedings of the IISc Centenary-International Conference on Advances in Mechanical Engineering (IC-ICAME)*, July 2–4, 2008, Bangalore, India.
9. S. K. Das, **S. Das**, and S. Chakraborty, Molecular dynamics simulation of water flow through nanochannels. *Proceedings of the 19th National and 8th ISHMT-ASME Heat and Mass Transfer Conference, (Paper No: 046), January 3–5, 2008, JNTU Hyderabad, India.*
10. **S. Das**, S. Singh, and S. Chakraborty, Time-periodic electroosmotic transport of a non-Newtonian bio-fluid. *Proceedings of the 19th National and 8th ISHMTASME Heat and Mass Transfer Conference, January 3–5, 2008, JNTU Hyderabad, India.*
11. **S. Das** and S. Chakraborty, Role of substrate kinetics on macromolecular transport and hybridization in microchannels. *Proceedings of the 19th National and 8th ISHMT-ASME Heat and Mass Transfer Conference, January 3–5, 2008, JNTU Hyderabad, India.*
12. **S. Das**, T. Das, and S. Chakraborty, An integrated thermo-fluid analysis of electroosmotic separation of biological macromolecules in microchannels. *Proceedings of the 18th National and 7th ISHMT-ASME Heat and Mass Transfer Conference, January 4–6, 2006, Indian Institute of Technology Guwahati, India.*

II.D. Conferences, Workshops, and Talks

II.D.1. Plenary Talk

1. Talk on “Water and Ion Transport in Nanocellulose: Capillary Physics and Electrohydrodynamics in Hierarchical Micro-Nanochannels” for Sustainable Materials Research Summit (SMART), Vancouver, Canada, August 7-9, 2022.

II.D.2. Keynote Talk

2. Talk on “All-atom molecular dynamics simulations of polyelectrolyte brushes” for Vebleo Webinar on Science, Engineering and Technology on September 29, 2021.

II.D.1. Invited Talks

1. Talk on “Computational Fluid Dynamics Modeling of Water and Ion Transport in Nanocellulose”, in the ACS Spring 2022, March 20-24, 2022, San Diego, California.
2. Talk on “Mutliscale Simulations for Optimizing Materials and Processes for Additive Manufacturing” in Frontiers in Mechanical Engineering and Sciences webinar series (March 4, 2022).
3. Talk on “Electrokinetic Transport in Polyelectrolyte-Brush Functionalized Nanochannels: An All-Atom Molecular Dynamics Exploration” in the Complex Fluids 2021 (CompFlu 2021) organized by Indian Society of Rheology and IIT Gandhinagar, December 13-15, 2021.
4. Talk on “Ionics and Liquid Transport at Polyelectrolyte-Brush-Functionalized Interfaces” in the Purdue University, ECS Chapter Fall 2020 Webinar Series, October 12, 2020.

5. Talk on “Structure, Energetics, and Protein Sensing of Curved Lipid Bilayer Systems” in the Biomaterials for Tissue Engineering (a Virtual Conference), June 27, 2020.
6. Talk on “Water and Ion Transport in Micro-Nanochannels: Wood and Beyond” in the 1st Advanced Wood Nanotechnology Workshop, November 8, 2019, University of Maryland, College Park.
7. Talk on “*Microfluidic Cantilever Spectroscopy Sensors*” in the *Nanotech 2019 Conference and Expo* (Session: *Micro & Bio Fluidics, Lab-On-Chip*), June 17 – June 19, 2019, Boston, MA.
8. Talk on “*Diffusioosmotic and Thermoosmotic Transport in Nanochannels Grafted with End-Charged Polyelectrolyte Brushes: Continuum Calculations and Molecular Dynamics Simulations*” in the Symposium titled *Multiscale Modeling of Soft Materials and Interfaces* at the 2018 Materials Research Society Fall Meeting and Exhibit, November 25 – November 30, 2018, Boston, MA.
9. Talk on “*Water at Nanoscale Interfaces*” at Annual Burger Symposium at College Park, MD on November 14, 2018 (Scheduled).
10. Talk on “3D-Printed Electronics” at *Intelligent Automation, Inc.* (a small business organization), Bethesda, MD on November 02, 2018.
11. Talk on “*Modeling Transport in Microfluidic Systems: Towards Better Equipping Ourselves for Solving Biomedical Engineering Problems*” at US Food and Drug Administration on June 28, 2018.
12. Talk on “*Water and Ions at Nanoscopic Interfaces: From 2-D materials to plasma membranes*” at Waterloo Institute of Nanotechnology in University of Waterloo, Canada on April 27, 2018.
13. Talk on “*Liquid at Complex Interfaces*” at National Institute of Standards and Technology, Gaithersburg, MD 20899 on February 22, 2018.
14. Talk on “*Liquid-Complex-Solid Interfaces*” at Harvard University, Cambridge, MA on November 28, 2016.
15. Talk on “*Thermodynamics, Fluidics, and Transport in Soft, Micronanoscale Systems: Biophysical and Bioengineering Applications*” at the National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD 20892, USA on December 17, 2015.
16. Talk on “*Thermodynamics, transport, and adhesion at soft, charged interfaces*” at 2015 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 29 - December 4, 2015.
17. Talk on “*Wetting and Electrohydrodynamics of Soft surfaces*” at Fluid Dynamics Review Seminar, University of Maryland on April 24, 2015.
18. Talk on “*Wetting and Electrohydrodynamics of Soft surfaces*” at the Department of Chemical Engineering, University of Maryland on March 31, 2015.

19. Talk on “*Micro/nano-scale transport and applications*” at the Canada-India Collaboration in Nano Science and Technology in National Institute of Nanotechnology (NINT), University of Alberta on May 10, 2013.
20. Talk on “*Soft capillarity and wetting*” at the Department of Mechanical Engineering, University of Maryland on April 25, 2013.
21. Talk on “*Fluidics in micro-nanoscales: Applications in energy and biological systems*” at the Department of Mechanical Engineering, University of Alberta, Canada on February 28, 2013.
22. Talk on “*Fluidics at micro-nanoscales: Soft capillarity, superoleophobicity and bio-electrohydrodynamics*” at the Satyendra Nath Bose National Centre for Basic Science (SNBNCBS), Kolkata, India on February 1, 2013.
23. Talk on “*Fluidics at micro-nanoscales: Soft capillarity, superoleophobicity and bio-electrohydrodynamics*” at the Engineering Mechanics Units (EMU), Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) Bangalore, India on January 30, 2013.
24. Talk on “*Fluidics at micro-nanoscales: Soft capillarity, superoleophobicity and bio-electrohydrodynamics*” at the Department of Physics, Indian Institute of Science (IISc) Bangalore, India on January 29, 2013.
25. Talk on “*Soft wetting at micro-nanoscales*” at the Department of Mechanical Engineering, Indian Institute of Technology (IIT) Kharagpur, India on January 16, 2013.
26. Talk on “*Fluidics at micro-Nanoscales: Soft capillarity, superoleophobicity and bio-electrohydrodynamics*” at the Simon Fraser University, British Columbia, Canada, on October 19, 2012.
27. Talk on “*Fluidics at micro-Nanoscales: Soft capillarity, superoleophobicity and bio-electrohydrodynamics*” at the Department of Mechanical Engineering, University of British Columbia on October 18, 2012.
28. Talk on “*Electrohydrodynamics and elastocapillary at nanoscales*” at the Centre of Smart Interfaces, Technische Universität Darmstadt, Germany on April 6, 2011.
29. Talk on “*Some issues of electrohydrodynamics in nanoscale*” at the Chair, Physics of Fluids, University of Twente, the Netherlands on November 30, 2009.
30. Talk on “*Electroviscous effects in narrow fluidic confinements*” at the IISc Centenary International Conference on Advances in Mechanical Engineering (IC-ICAME), held at Bangalore, India (July, 2008).
31. Talk on “*Combined pressure-driven and electroosmotic microchannel transport for enhanced DNA hybridization*” in Department of Mechanical Engineering, University of California, Irvine, USA (August, 2006).

II.D.3. Refereed Abstracts

(# Indicates the Graduate Students of Dr. Das in UMD; \$ Indicates the Undergraduate Students or Summer Interns supervised by Dr. Das in UMD; ^ Indicates the presenter)

1. #^T. H. Pial, H. Sachar, and **S. Das**, Atomistic Investigation on the Effect of Different Counterions and Associated Bridging Mechanism in Polyelectrolyte Brush. Abstract ID: Y63.00015, *APS March Meeting, Virtual, March 15-19, 2021*.
2. #^V. S. Sivasankar and **S. Das**, Effect of Particle Shape in the Transport of Particles in Microfluidic Flows. Abstract ID: R24.00007, *APS March Meeting, Virtual, March 15-19, 2021*.
3. #^B. S. Chava, #Y. Wang, #V. S. Sivasankar, and **S. Das**, Nanoconfinement of Water-in-Salt Electrolytes in Nanometer-wide Boron-Nitride Nanotube for Potential Application in Aqueous Li-ion Batteries. Abstract ID: M25.00011, *APS March Meeting, Virtual, March 15-19, 2021*.
4. #^S. Etha, #P. R. Desai, #H. Sachar, and **S. Das**, Wetting Driven Globule-to-Brush Transition of Polymer-grafted Surfaces. Abstract ID: M06.00012, *APS March Meeting, Virtual, March 15-19, 2021*.
5. #^H. Sachar, #B. Chava, #T. Pial, and **S. Das**, All-Atom Molecular Dynamics Simulations of the Temperature Response of Densely Grafted Polyelectrolyte Brushes. Abstract ID: F63.00001, *APS March Meeting, Virtual, March 15-19, 2021*.
6. **S. Das**, #H. Sachar, #T. Pial, and #B. Chava, Rotational Motion of Water Molecules Within the Polyelectrolyte Brush Layer Serving as a Soft and Active Nanoconfinement. Abstract ID: A03.00010, *APS March Meeting, Virtual, March 15-19, 2021*.
7. #^H. S. Sachar, #T. H. Pial, #B. S. Chava, and **S. Das**, Atomistic Resolution of the Effects of Charge Density on Polyelectrolyte Brush Microstructure via Molecular Dynamics Simulations. *2020 Virtual MRS Spring/Fall Meeting and Exhibit, November 27-December 4, 2020*.
8. #^V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and **S. Das**, Thermal Gradient Driven Transport in Brush Functionalized Nanochannels. *2020 Virtual MRS Spring/Fall Meeting and Exhibit, November 27-December 4, 2020*.
9. **S. Das**, #T. H. Pial, #H. S. Sachar, and #P. R. Desai, Atomistically Resolved Electroosmotic Transport in Polyelectrolyte Brush Grafted Nanochannels. *2020 Virtual MRS Spring/Fall Meeting and Exhibit, November 27-December 4, 2020*.
10. #^V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and **S. Das**, Fast Water Transport in Polyelectrolyte Brush Functionalized Nanochannels. Abstract ID: X35.00013, *APS March Meeting, March 2–6, 2020, Denver, Colorado*.
11. **S. Das**, #V. S. Sivasankar, #H. Sachar, #S. Sinha, and D. Hines, Numerical Modeling of In-Situ Curing of a Photopolymerizing and Spreading Drop with Applications in 3D-Printing. Abstract ID: P15.00002, *APS March Meeting, March 2–6, 2020, Denver, Colorado*.
12. #^P. R. Desai, **S. Das**, and K. C. Neuman, Coarse-grained Modeling of DNA Plectoneme Formation in the presence of Base-pair Mismatches. Abstract ID: G22.00006, *APS March Meeting, March 2–6, 2020, Denver, Colorado*.
13. #^H. Jing, #Y. Wang, #P. R. Desai, K. S. Ramamurthi, and **S. Das**, Formation and Properties of Self-Assembled Nanoparticle-Supported Lipid Bilayer Probed Through Molecular Dynamics Simulations. Abstract ID: D23.00001, *APS March Meeting, March 2–6, 2020, Denver, Colorado*.
14. #^H. S. Sachar, #T. H. Pial, #P. R. Desai, #S. A. Etha, #Y. Wang, P. W. Chung, and **S.**

- Das**, Densely Grafted Polyelectrolyte Brushes Trigger “Water-in-Salt” like Scenarios and Ultraconfinement Effect. Abstract ID: A34.00007, *APS March Meeting, March 2–6, 2020, Denver, Colorado*.
15. #[^]P. R. Desai, **S. Das**, and K. C. Neuman, Molecular Dynamics Simulation of Supercoiled DNA with Mismatched Base Pair-Probing the Role of Structural Defect on Plectoneme Pinning. Abstract ID: C64.00005, *APS March Meeting, March 4–8, 2019, Boston, Massachusetts*.
 16. #[^]Y. Wang, #P. R. Desai, and **S. Das**, Energetics of the adsorption of iodide ion at the air-water interface. Abstract ID: K16.00005, *APS March Meeting, March 4–8, 2019, Boston, Massachusetts*.
 17. [^]**S. Das**, #H. S. Sachar, and #V. S. Sivasankar, Electrokinetics in pH-responsive polyelectrolyte-brush-grafted nanochannels: Effect of the appropriate Strong Stretching Theory representation of the polyelectrolytes. Abstract ID: K48.00008, *APS March Meeting, March 4–8, 2019, Boston, Massachusetts*.
 18. #[^]H. Jing, #Y. Wang, #P. R. Desai, K. Ramamurthi, and S. Das, Nanovesicles versus Nanoparticle-Supported Lipid Bilayers: Differences in Equilibrium Structures and Properties Unraveled by Molecular Dynamics Simulations. Abstract ID: V65.00004, *APS March Meeting, March 4–8, 2019, Boston, Massachusetts*.
 19. #[^]Y. Wang, #K. Ahuja, #S. Sinha, #P. Desai, #H. Jing, and **S. Das**, Capillarity-Driven Water-Holey-Graphene Interactions. Abstract ID: NM01.05.08, *2018 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 25 - November 30, 2018*.
 20. #[^]P. R. Desai, **S. Das**, and K. Neuman, Supercoiled DNA with Mismatched Base Pair—Probing the Role of Structural Defect on Plectoneme Pinning by Molecular Dynamics Simulation. Abstract ID: BM03.03.16, *2018 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 25 - November 30, 2018*.
 21. [^]**S. Das**, #H. Jing, #P. Desai, #Y. Wang, and #S. Sinha, Drop on Superhydrophobic Soft Surface-Towards Designing Self-Cleaning Soft Surfaces. Abstract ID: BM03.08.05, *2018 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 25 - November 30, 2018*.
 22. #[^]S. Sinha, #H. Jing, #H. S. Sachar, and **S. Das**, Specific Adhesion and Non-Specific Adhesion of Nanoparticles Influenced by the Surface Charge of Plasma Membranes. Abstract ID: BM03.07.05, *2018 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 25 - November 30, 2018*.
 23. #[^]H. S. Sachar and **S. Das**, Revisiting the Strong Stretching Theory for pH-Responsive Polyelectrolyte Brushes. Abstract ID: BM03.01.08, *2018 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 25 - November 30, 2018*.
 24. #Y. Wang, #S. Sinha, and [^]**S. Das**, Understanding the self-assembly of the inkjet-printed CNT inks: Towards developing printable CNT inks. Abstract ID: P03.00006, *APS March Meeting, March 5–9, 2018, Los Angeles, California*.
 25. #K. Ahuja, #[^]Y. Wang, #S. Sinha, #P. R. Desai, and **S. Das**, Water-hole graphene interactions. Abstract ID: S46.00005, *APS March Meeting, March 5–9, 2018, Los Angeles, California*.
 26. #[^]S. Sinha, #H. Jing, #H. Sachar, and **S. Das**, Conditions on length of Ligand-

- Receptor pairs for nanoparticle adhesion influenced by plasma membrane surface charge. Abstract ID: V54.00012, *APS March Meeting, March 5–9, 2018, Los Angeles, California*.
27. #S. Sinha, J. Singer, D. Hines, A. Dasgupta, and **S. Das**, Aerosol-Jet Printing of Compliant Ball Grid Array Pads. Abstract ID: PM04.09.37, *2017 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 26 - December 1, 2017*.
 28. #P. R. Desai, #S. Sinha, and **S. Das**, Interdigitated Polyelectrolytes and Polymer Brushes—Weakly Interpenetration Regime. Abstract ID: BM11.13.10, *2017 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 26 - December 1, 2017*.
 29. #G. Chen and **S. Das**, Environmental and Curvature Responsive PE Brushes. Abstract ID: PM03.07.14, *2017 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 26 - December 1, 2017*.
 30. #S. Sinha, H. Jing, and **S. Das**, Janus-Like Behavior and Charge Inversion in Negatively Charged Semi-Permeable Plasma Membrane. Abstract ID: BM01.09.09, *2017 Materials Research Society Fall Meeting and Exhibit, Boston, Massachusetts, November 26 - December 1, 2017*.
 31. #G. Chen, Y. Gu, D. Hines, and **S. Das**, Shear Flow Instabilities and Droplet Size Effects on Aerosol Jet Printing Resolution. Abstract ID: BAPS.2017.DFD.KP1.28, *70th Annual Meeting of the APS Division of Fluid Dynamics, November 19–21, 2017, Denver, Colorado*.
 32. #G. Chen and **S. Das**, Efficient Energy Conversion by Grafting Nanochannels with End-charged Stimuli-responsive Polyelectrolyte Brush. Abstract ID: BAPS.2017.DFD.L13.10, *70th Annual Meeting of the APS Division of Fluid Dynamics, November 19–21, 2017, Denver, Colorado*.
 33. #S. Sinha, D. Hines, A. Dasgupta, and **S. Das**, 3D Printing of Ball Grid Arrays. Abstract ID: BAPS.2017.MAR.S11.11, *APS March Meeting, March 13–17, 2017, New Orleans, Louisiana*.
 34. **S. Das**, #S. Sinha, and #H. Jing, Charge Inversion in semi-permeable membranes. Abstract ID: BAPS.2017.MAR.B5.10, *APS March Meeting, March 13–17, 2017, New Orleans, Louisiana*.
 35. #H. Jing, #S. Sinha, and **S. Das**, Drop equilibrium on charged, elastic surfaces. Abstract ID: BAPS.2017.MAR.C16.9, *APS March Meeting, March 13–17, 2017, New Orleans, Louisiana*.
 36. #P. R. Desai, #S. Sinha, and **S. Das**, Polymer brushes in weakly interpenetrating regimes. Abstract ID: BAPS.2017.MAR.S40.10, *APS March Meeting, March 13–17, 2017, New Orleans, Louisiana*.
 37. #G. Chen and **S. Das**, Confinement effect on liquid and ion transport in nanochannels coated with environmental-stimuli-responsive polyelectrolyte (PE) brushes. Abstract ID: BAPS.2016.DFD.D11.2, *69th Annual Meeting of the APS Division of Fluid Dynamics, November 20–22, 2016, Portland, Oregon*.
 38. #G. Chen, #S. Sinha, and **S. Das**, Scaling Laws for liquid and ion transport in nanochannels grafted with polyelectrolyte brushes. Abstract ID: BAPS.2016.MAR.P37.9, *APS March Meeting, March 14–18, 2016, Baltimore, Maryland*.

39. #^J. Andrews, #S. Sinha, P. W. Chung, and **S. Das**, Spreading of water nanodroplets on graphene. Abstract ID: BAPS.2016.MAR.B53.10, *APS March Meeting, March 14–18, 2016, Baltimore, Maryland*.
40. ^M. Hassanpourfard, Z. Nikakhtari, R. Ghosh, **S. Das**, T. Thundat, and A. Kumar, Bacterial floc mediated rapid streamer formation in creeping flows. Abstract ID: BAPS.2015.DFD.G24.2, *68th Annual Meeting of the APS Division of Fluid Dynamics, November 22–24, 2015, Boston, Massachusetts*.
41. #^J. Patwary, #G. Chen, and **S. Das**, Streaming potential and energy conversion in nanochannel grafted with poly-zwitterion brushes. Abstract ID: BAPS.2015.DFD.R4.7, *68th Annual Meeting of the APS Division of Fluid Dynamics, November 22–24, 2015, Boston, Massachusetts*.
42. #^G. Chen and **S. Das**, Electrokinetic transport in nanochannels grafted with polyelectrolyte brushes with end-charging. Abstract ID: BAPS.2015.DFD.G14.3, *68th Annual Meeting of the APS Division of Fluid Dynamics, November 22–24, 2015, Boston, Massachusetts*.
43. #^S. Sinha and **S. Das**, Surface tension mediated under-water adhesion of rigid spheres on soft, charged surfaces. Abstract ID: BAPS.2015.DFD.G28.10, *68th Annual Meeting of the APS Division of Fluid Dynamics, November 22–24, 2015, Boston, Massachusetts*.
44. **S. Das** and #^G. Chen, Electrokinetic transport in nanochannels grafted with polyelectrolyte with pH-dependent charge density. *International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK) and the International Conference on Nanochannels, Microchannels and Minichannels (ICNMM), (Presentation ID: 48246) July 6–9, 2015, San Francisco, California*.
45. ^A. Kumar, M. Hassanpourfard, and **S. Das**, Low Reynolds number biofilm streamers form as highly viscous liquid jets. Abstract ID: BAPS.2014.DFD.E6.1, *67th Annual Meeting of the APS Division of Fluid Dynamics, November 23–25, 2014, San Francisco, California*.
46. ^S. Karpitschka, **S. Das**, B. Andreotti, and J. H. Snoeijer, Dynamic contact angle of a soft solid. Abstract ID: BAPS.2014.DFD.H15.5, *67th Annual Meeting of the APS Division of Fluid Dynamics, 2014 Nov, November 23–25, 2014, San Francisco, California*.
47. ^**S. Das**, Role of surface charges in drop-evaporation-triggered “coffee stain” formation. *9th International Conference on Two-Phase Systems for Ground and Space Applications, September 22–26, 2014, Baltimore, Maryland*.
48. ^**S. Das**, S. K. Mitra, J. C. T. Eijkel, N. R. Tas, and S. Chakraborty, Inertial and Washburn regimes in filling of charged capillaries. BAPS.2013.DFD.D32.3, *66th Annual Meeting of the APS Division of Fluid Dynamics, November 24–26, 2013, Pittsburgh, Pennsylvania*.
49. ^S. Mitra, P. Waghmare, and **S. Das**, New drop deposition technique for wettability characterization of under-liquid superoleophobic surfaces. Abstract ID: BAPS.2013.DFD.R33.8, *66th Annual Meeting of the APS Division of Fluid Dynamics, November 24–26, 2013, Pittsburgh, Pennsylvania*.
50. P. Waghmare, **S. Das**, and ^S. K. Mitra, Technique for needle-free drop deposition: Pathway for precise characterization of superhydrophobic surfaces. Abstract ID:

- BAPS.2013.DFD.R33.7, *66th Annual Meeting of the APS Division of Fluid Dynamics, November 24–26, 2013, Pittsburgh, Pennsylvania.*
51. ^L. A. Lubbers, J. H. Weijs, **S. Das**, L. Botto, B. Andreotti, and J. H. Snoeijer, Interaction of drops on a soft substrate. BAPS.2013.DFD.L34.3, *66th Annual Meeting of the APS Division of Fluid Dynamics, November 24–26, 2013, Pittsburgh, Pennsylvania.*
 52. ^**S. Das**, A. Guha, and S. K. Mitra, Electroviscous effects in charged nanocapillary. *Proceedings of the 24th Canadian Congress of Applied Mechanics (CANCAM 2013), (Paper No. 125) June 2–6, 2013, Saskatoon, Saskatchewan, Canada.*
 53. ^S. Mitra and **S. Das**, Coffee stain effect with liquid droplets. Abstract ID: BAPS.2012.DFD.H8.1, *65th Annual Meeting of the APS Division of Fluid Dynamics, November, 18–20, 2012, San Diego, California.*
 54. ^J. Snoeijer, B. Andreotti, **S. Das**, and A. Marchand, Contact angles on a soft solid: from Young's law to Neumann's law. Abstract ID: BAPS.2012.DFD.L19.5, *65th Annual Meeting of the APS Division of Fluid Dynamics, November 18–20, 2012, San Diego, California.*
 55. **S. Das**, O. Shardt, J. J. Derksen, ^S. K. Mitra, Dynamics of microscale liquid droplets on micropatterned surfaces. *ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE2012) (Paper ID: IMECE2012-86939), November 9–15, 2012, Houston, Texas.*
 56. S. Mitra and ^**S. Das**, Influence of solvent polarization on Electric Double Layer interactions in nanochannels. Abstract ID: BAPS.2012.NWS.C4.8, *14th Annual Meeting of the APS Northwest Section, October 18–20, 2012, Simon Fraser University, Vancouver, British Columbia, Canada.*
 57. ^S. Mitra and **S. Das**, Influence of solvent polarization on Electric Double Layer interactions in nanochannels. Abstract ID: BAPS.2012.NWS.C4.8, *14th Annual Meeting of the APS Northwest Section, October 18–20, 2012, Simon Fraser University, Vancouver, British Columbia, Canada.*
 58. **S. Das** and ^S. K. Mitra, Effect of solvent polarization in nano-confined Electric Double Layer with finite ion sizes. *Pacific Rim Meeting (PRiME 2012) on Electrochemical and Solid State Science, October 7–12, 2012, Honolulu, Hawaii.*
 59. ^**S. Das** and S. Chakraborty, Electroviscous effects in narrow fluidic confinements beyond the Debye-Hückel limits. *Proceedings of the IISc Centenary-International Conference on Advances in Mechanical Engineering (IC-ICAME), July 2–4, 2008, Bangalore, India.*
 60. ^**S. Das**, S. DuttaRoy, and S. Chakraborty, Nonlinear effects in electrokinetic separation of charged macromolecules in nanochannels. *Proceedings of the Singapore International Chemistry Conference 5 (SICC5) and 7th Asia-Pacific International Symposium on Microscale Separation and Analysis (APCE 2007), 2007 Dec, December 16–19, 2007, Suntec City, Singapore.*

II.E. Sponsored Research and Programs

II.E.1. Total Grant: \$5.75 M; Total Grant as PI: \$4.60 M; Total Grant as co-PI: \$1.15M; Personal Share: \$3.80 M

(Current grants are marked in blue)

Title: Thermodynamics, Electroosmosis, and Electrokinetic Energy Generation in Nanochannels Functionalized with Anionic and Cationic Polyelectrolyte Brushes in Presence of Multivalent Counterions

Funding Source: U.S. Department of Energy

Total Award Amount: \$450,000

Time Period: 12/2021 – 11/2024

Role: PI

Share: \$450,000

Title: Reliability validation and Sustainment of Direct-write Printed RF Devices

Funding Source: NextFlex Consortium

Total Award Amount: \$400,000

Time Period: 03/2022 – 02/2023

Role: co-PI

PI: Abhijit Dasgupta

Other co-PIs: Peter Sandborn, William Lucyshyn

Share: \$150,000

Title: Materials-Process-Structure-Property Relationships of Aerosol Jet Printable Dielectric and Conducting Inks

Funding Source: Advanced Manufacturing, Materials, and Processes (AMMP), National Center for Manufacturing Sciences

Total Award Amount: \$172,341

Time Period: 10/2020 – 03/2023

Role: PI

co-PI: Abhijit Dasgupta, Taylor Woehl

Share: \$90,479

Title: Quantification of the Thermo-soluto-fluidics in Aerosol Jet and Syringe Printing: Process-Structure Analysis for Printed Hybrid Electronics Applications

Funding Source: Army Research Laboratory (ARL)

Total Award Amount: \$300,000

Time Period: 11/2020 – 09/2022

Role: PI

co-PI: Abhijit Dasgupta

Share: \$150,000

Title: Qualification of 3D Printed Hybrid Electronics (PHEs) with Soldered MEMS Components in Extremely High Accelerations

Funding Source: Army Research Laboratory (ARL)

Total Award Amount: \$750,000

Time Period: 11/2020 – 06/2023

Role: co-PI

PI: Abhijit Dasgupta

Share: \$375,000

Title: Thermomechanical Stability Analysis for Designing the 3D Printable Carbon-Fiber Reinforced Polymer Inks

Funding Source: Naval Air Warfare Center Aircraft Division (NAWCAD)

Total Award Amount: \$160,000

Time Period: 1/2020 – 3/2022

Role: PI

co-PI: Abhijit Dasgupta

Share: \$112,000

Title: Additive Manufacturing of Microscale Inductors for RF Applications

Funding Source: Advanced Manufacturing, Materials, and Processes, National Center for Manufacturing Sciences (AMMP) (ARO)

Total Award Amount: \$300,000

Time Period: 07/2019 – 06/2022

Role: PI

co-PI: Abhijit Dasgupta, Ryan Sochol

Share: \$100,000

Title: Direct-Write Electronic Printing for RF Electronics Sustainment

Funding Source: Maryland Center for Excellence for Sustainment Sciences (supported by Lockheed Martins)

Total Award Amount: \$200,000

Time Period: 10/2019 – 09/2020

Role: PI

co-PI: Abhijit Dasgupta

Share: \$140,000

Title: Surface Effects on Fluid Flows in 3D Printed Micro-channels: Computational Simulations with Empirical Validation

Funding Source: National Science Foundation

Total Award Amount: \$100,000

Time Period: 1/2020 – 12/2020

Role: PI

Share: \$100,000

Title: 3D-Printed Electronics on Non-flat Surfaces

Funding Source: Laboratory for Physical Sciences[#]

Total Award Amount: \$1,104,245*

Time Period: 4/2019 – 12/2023

Role: PI

co-PI: Abhijit Dasgupta

Share: \$772,971*

[#]Laboratory for Physical Sciences (LPS) is providing funding for this project by adding funding to the existing contract with UMD through the ECE department (Project Title: Device Processing and Clean Room Operations).

*These numbers are based on the committed support from the LPS (i.e., support for one postdoc for 33

months from 4/2019 – 12/2020 and 01/2023 – 12/2023, support for one PhD student for one year from 01/2020 – 12/2020, support for two postdocs and 0.5 PhD students for two years from 1/2021 – 12/2022, support for summer salary of Prof. Das and summer salary of Prof. Dasgupta, and support for consumables and travel)

Title: 3D printing of conductive inks on curved substrates: printability and reliability

Funding Source: Harris Corporation through CALCE

Total Award Amount: \$20,000

Role: PI

Co-I: Abhijit Dasgupta

Share: \$10,000

Title: Conformal 3-D Printed Carbon-Nanotube-Reinforced Composites

Funding Source: NAVAIR (U.S. Navy Naval Air Systems Command)

Total Award Amount: \$160,000

Period of Funding: 01/2017 – 09/2018

Role: PI

Co-I: None

Title: Probing Water-Holey-Graphene Interactions for Removing Lead from Water and Oil-Water Separation

Funding Source: Center for Engineering Concepts Development (CECD)

Total Award Amount: \$25,000

Time Period: 10/2016 – 09/2018

Role: PI

co-PI: None

Share: \$25,000

Title: Polyelectrolyte-Grafted Nanochannels for Enhanced Electrochemomechanical Energy Conversion

Funding Source: U.S. Department of Energy

Total Award Amount: \$450,000

Time Period: 09/2017 – 11/2021

Role: PI

co-PI: Peter W. Chung

Share: \$450,000

Title: Conformal Printing of Conductors and Dielectrics Onto Complex 3-D Surfaces

Funding Source: NextFlex

Total Award Amount: \$500,000

Time Period: 04/2017 – 09/2018

Role: PI

co-PI: Abhijit Dasgupta

Share: \$250,000

Title: Conformal Electronic Circuits on Curvilinear 3-D Printed Structures

Funding Source: Laboratory for Physical Sciences

Total Award Amount: \$352,885*

Time Period: 10/2016 – 3/2019

Role: PI

co-PI: Abhijit Dasgupta

Share: \$247,019*

*These numbers are based on the committed support from the LPS (i.e., support for one postdoc for 30 months from 10/2016 to 03/2019, support for summer salaries of Prof. Das and Prof. Dasgupta, and consumables)

Title: 3-D Printing for Direct-Write printed Ball Grid Arrays (BGAs) as substitution for Solder bumped BGAs

Funding Source: Laboratory for Physical Sciences

Total Award Amount: \$205,678

Time Period: 01/2016 – 12/2017

Role: PI

co-PI: Abhijit Dasgupta

Share: \$143,974.60

Title: Evaporation-triggered nanocomposite formation for aerospace applications

Funding Source: Minta Martin Funding, A. James Clark School of Engineering, University of Maryland, College Park

Total Award Amount: \$75,000

Time Period: 10/2014 – 06/2016

Role: PI

co-PI: None

Share: \$75,000

II.E.2. Contracts

Title: Service Contract for Microfluidics Study

Funding Source: The US Food and Drug Administration

Total Award Amount: \$8,000

Time Period: 07/2017– 03/2018

Role: PI

co-PI: None

II.F. Gifts, and Funded Research not administered by ORA

II.F.1. Other<http://scholar.google.ca/citations?user=HPUsSB0AAAAJ>

Program: Graduate Partnership Program between University of Maryland and National Heart, Lung and Blood Institute (NHLBI), NIH

Award: Support for 1 PhD student for 4 years (salary of the student comes directly from NIH)

Project Title: Polymer dynamics simulations of DNA topology and mechanisms of topoisomerase activity

Role: PI (UMD)

Collaborator: Dr. Keir Neuman (PI, NHLBI, NIH)

Program: UMD-NCI Partnership for Integrative Cancer Research

Award: Support for 1 PhD student for 3.5 years (salary of the student comes directly from NIH)

Project Title: Curvature-driven membrane-protein interactions

Role: PI (UMD)

Collaborator: Dr. Kumaran Ramamurthi (PI, CCR, NCI, NIH)

II.G. Research Fellowship, Prizes, and Awards

II.G.1. Research Fellowship, Prizes, Recognitions, and Awards of Dr. Siddhartha Das

Recognition: Included in the Stanford University list of world's top 2% scientists
Description of the Recognition: Recognized as being included in the Stanford University list of world's top 2% scientists based on the citations for the year 2021. The rank is **67,534** (with self-citations) and **82,069** (without self-citations). The rank is **938** among **90,869** researchers in the sub-field of *Chemical Physics*. Hence the rank is nearly in the top 1% in the sub-field of *Chemical Physics*. The rank is 9 among all the faculty members in the Department of Mechanical Engineering, UMD and 27 among all the faculty members or researchers in the A. James Clark School of Engineering.
Year: 2022

Recognition: Six journal papers have been identified by the Web of Science as ESI highly cited papers in the last 5 years. These papers represent the papers with top 1% highest citations among the entire Materials Science or Chemistry field.
Year: 2022

Fellowship: Elected as the Fellow of the Institution of Engineering and Technology, U.K.
Year: 2022

Award: Soft Matter Emerging Investigator
Description of the Award: This recognition is associated with the invitation to contribute an article to the Emerging Investigator collections of the *Soft Matter* journal.
Year: 2022

Recognition: Identified as an international expert to provide expert opinion on a news story published in a scientific magazine (*ChemistryWorld*)
Description of the Recognition: The story titled "*Teflon-inspired nanochannels outperform biological water transporters*" published in *ChemistryWorld* focused on a journal paper titled "*Ultrafast water permeation through nanochannels with a densely fluorinated interior surface*", published in the prestigious journal SCIENCE. The story quotes my expert opinion on the paper.
Year: 2022

<p>Award: Outstanding Research Award for Junior Faculty for the A. James Clark School of Engineering, University of Maryland</p> <p>Description of the Award: This award recognizes one faculty member from the A. James Clark School of Engineering who is within 10 years of his/her first faculty appointment in recognition of his/her exceptional and influential research contributions and accomplishments.</p> <p>Year: 2021</p>
<p>Recognition: Included in the Stanford University list of world's top 2% scientists</p> <p>Description of the Recognition: Recognized as being included in the Stanford University list of world's top 2% scientists based on the citations for the year 2020. The rank is 46,179 (with self-citations) and 60,027 (without self-citations). The rank is 777 (with self-citations) among 92,378 researchers in the sub-field of Chemical Physics. The rank is 7 among all the faculty members in the Department of Mechanical Engineering, UMD and 29 among all the faculty members or researchers in the A. James Clark School of Engineering.</p> <p>Year: 2021</p>
<p>Fellowship: Elected as the VEBLEO Fellow</p> <p>Year: 2021</p>
<p>Award: Selected for invitation to the 2021 Physical Chemistry Chemical Physics (PCCP) Emerging Investigators Themed Issue</p> <p>Description of the Award: This recognition is for the selected short-listed nominees (for the 2020 PCCP Emerging Investigator Lectureship), as chosen by the <i>PCCP Editorial Board</i>.</p> <p>Year: 2021</p>
<p>Fellowship: Elected as the Fellow of the Institute of Physics, U.K.</p> <p>Year: 2021</p>
<p>Award: Invited to the Inaugural Cohort of the Research Leaders Fellows Program of University of Maryland</p> <p>Description of the Award: “<i>The University of Maryland’s Research Leaders Fellows Program is designed to accelerate the growth and potential of future research leaders at the University of Maryland through an intensive cohort-based leadership program with the goal of elevating the research career, productivity, and impact of UMD’s most promising researchers.</i>” (https://research.umd.edu/researchleaders) Therefore, selection to this program is a recognition of Dr. Siddhartha Das’ is a testament to his existing research success and leadership</p> <p>Year: 2020</p>
<p>Recognition: Invited to contribute a Perspective review article on theoretical investigations of polyelectrolyte brushes to the journal <i>Physical Chemistry Chemical Physics</i></p> <p>Description of the Recognition: “<i>Perspectives are high profile articles that present an authoritative state-of-the-art account of the selected research field. PCCP Perspectives</i>”</p>

take a wide variety of forms including personal accounts of research, critical analyses of topics of current interest and essential introductions to a field.” (<https://pubs.rsc.org/en/journals/articlecollectionlanding?sercode=cp&themeid=7e6a8290-d095-4f0a-bea6-7ba1836ebbdd>) Being invited to contribute a Perspective article is a recognition of being an authority on the topic.

Year: 2020

Award: Honoree at University of Maryland’s Maryland Research Excellence Celebration.

Description of the Award: This award was bestowed to Prof. Das to recognize his research contributions in 2019 that have “*demonstrably elevated the visibility and reputation of the University of Maryland Research Enterprise*”.

Year: 2020

Award: Selected for invitation to the inaugural Physical Chemistry Chemical Physics (PCCP) Emerging Investigators Themed Issue

Description of the Award: This recognition is for the selected short-listed nominees (for the 2019 PCCP Emerging Investigator Lectureship), as chosen by the *PCCP Editorial Board*.

Year: 2019

Fellowship: Elected as the Fellow of the Royal Society of Chemistry

Year: 2019

Award: Honoree at University of Maryland’s Inaugural Maryland Research Excellence Celebration.

Description of the Award: This award was bestowed to Prof. Das based on his research contributions in 2018. A total of 200 professors from the entire university were honored.

Year: 2019

Award: Hind Rattan Award (Hindi Phrase when translated to English means “Jewel of India”) by NRI Welfare Society of India

Description of the Award: Prof. Das has been selected to receive the award in a function in Bangalore, India on January 9, 2019 for his “Outstanding services, contributions and achievements” in his professional field. This award is one of the highest Indian diasporic awards granted annually to non-resident persons of Indian origin (NRIs).

Year: 2019

Award: Indian Institute of Technology Kharagpur (IITKGP) Young Alumni Achiever Awards 2018

Description of the Award: These awards started by IITKGP in 2018 “*recognize alumni age 40 or younger who have demonstrated emerging and unique innovation, creativity and success in his or her chosen career.*” (<http://alumni.iitkgp.ac.in/Alumniweb/AchieverAward>) (Announcement of the award: [http://smiel.umd.edu/slide/iit-kharagpur-young-alumni-achiever-](http://smiel.umd.edu/slide/iit-kharagpur-young-alumni-achiever-award_trashed/36559533_388627534877164_8348315086435123200_o/#lightbox/0/)

[award_trashed/36559533_388627534877164_8348315086435123200_o/#lightbox/0/](http://smiel.umd.edu/slide/iit-kharagpur-young-alumni-achiever-award_trashed/36559533_388627534877164_8348315086435123200_o/#lightbox/0/))

Year: 2018

<p>Award: Selection as Editorial Board Member of <i>Scientific Reports</i> Description of the Award: Selected to be an Editorial Board Member in the Fluids and Plasma Physics category Year: 2017</p>
<p>Award: Outstanding Reviewer Recognition Description of the Award: Recognized as the <i>Outstanding Reviewer</i> for the journal <i>International Journal of Non-linear Mechanics</i> Year: 2015</p>
<p>Award: Outstanding Mentor for PROMISE AGEP Program Description of the Award: Nominated as the <i>Outstanding Mentor</i> for the University System of Maryland PROMISE AGEP program for STEM Education for underrepresented minorities Year: 2015</p>
<p>Award: Honoree in 8th Annual University-Wide Celebration of Scholarship and Research (University of Maryland, College Park) Description of the Award: This honor was bestowed on Dr. Das based on his 2014 paper streamer formation in <i>Scientific Reports</i>. Year: 2015</p>
<p>Award: Banting Postdoctoral Fellowship (2011-2012) Description of the Award: This fellowship is the most prestigious postdoctoral fellowship offered by <i>Natural Sciences and Engineering Research Council (NSERC), Canada</i>. Secured a rank of 4 out of 214 international applicants in the competition. Year: 2012</p>
<p>Award: Emerald Engineering Outstanding Doctoral Research Awards Description of the Award: This award recognizes the best PhD dissertation worldwide in the area of <i>Numerical Heat Transfer & Computational Fluid Dynamics</i> Year: 2011</p>
<p>Award: High Value PhD Fellowship Description of the Award: This Fellowship was used to be offered every year by the Indian Institute of Technology, Kharagpur to the topmost PhD students of the institute Year: 2007</p>
<p>Award: National Doctoral Fellowship Description of the Award: This fellowship is offered by All India Council of Technical Education (AICTE) to a very selected group of Engineering PhD candidates across India. Year: 2006</p>
<p>Award: Innovative Students Project Award (Undergraduate Level)</p>

Description of the Award: This award is offered by Indian National Academy of Engineering (INAE) to the most outstanding undergraduate research projects in India.
Year: 2005

Award: S.P. Sengupta Memorial Award

Description of the Award: This award is offered by Indian Institute of Technology (IIT) Kharagpur, India for the best undergraduate project on Computational Fluid Dynamics
Year: 2005

II.G.2. Students' Awards and Recognitions (Awards and recognitions received by graduate and undergraduate students advised by Dr. Siddhartha Das)

Mr. Sai Ankit Etha (Current PhD student of Dr. Das) was selected as the Finalist for the Padden Award Symposium to be held at the APS March meeting 2023 (October, 2022).

Mr. Vishal Sankar Sivasankar (Current PhD student of Dr. Das) was selected for the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2022).

Mr. Bhargav Sai Chava (Current PhD student of Dr. Das) was selected for the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2022).

Ms. Anjali Dhamsania (belonging to the GEMSTONE Team GECKO, mentored by Dr. Das) won the 2022 GEMSTONE Outstanding Gemstone Scholar Award for Seniors (May, 2022).

Dr. Harnoor Singh Sachar (Former PhD student of Dr. Das) won the Department of Mechanical Engineering, UMD best PhD Dissertation award for 2021 (April, 2022).

Mr. Bhargav Sai Chava (Current PhD student of Dr. Das) was selected for the 2022 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2021).

Mr. Vishal Sankar Sivasankar (Current PhD student of Dr. Das) was selected for the 2022 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2021).

Mr. Turash Haque Pial (Current PhD student of Dr. Das) was selected for the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2021).

Mr. Sai Ankit Etha (Current PhD student of Dr. Das) was for the Outstanding Graduate Assistant Award for Academic Year 2020-2021 offered by the Graduate School, University of Maryland (December, 2020).

Mr. Turash Haque Pial (Current PhD student of Dr. Das) was selected for the 2021 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2020).
Mr. Sai Ankit Etha (Current PhD student of Dr. Das) was selected for the 2021 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2020).
Mr. Harnoor Singh Sachar (Current PhD student of Dr. Das) was selected as the Finalist for the Padden Award Symposium to be held at the 2021 Virtual APS March Meeting (November, 2020).
Mr. Harnoor Singh Sachar (Current PhD student of Dr. Das) was selected for the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2020).
Mr. Harnoor Singh Sachar (Current PhD student of Dr. Das) was selected for the 2020 Future Faculty Program of the A. James Clark School of Engineering of University of Maryland, College Park (January, 2020).
Mr. Harnoor Singh Sachar (Current PhD student of Dr. Das) was for the Outstanding Graduate Assistant Award for 2019 offered by the Graduate School, University of Maryland (December, 2019).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) won the Department of Mechanical Engineering, UMD best PhD Dissertation award for 2018.
Mr. Haoyuan Jing (Current PhD student of Dr. Das) was selected for the 2019 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2018).
Mr. Parth Rakesh Desai (Current PhD student of Dr. Das) was selected for the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2018).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) was selected for the Outstanding Graduate Assistant Award for 2018 offered by the Graduate School, University of Maryland (April, 2018).
Dr. Guang Chen (Former PhD student of Dr. Das) won the Department of Mechanical Engineering, UMD best PhD Dissertation award for 2017.
Mr. Yanbin Wang (Former PhD student of Dr. Das) was selected for the 2018 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2017).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) was selected for receiving the STLE (Society for Tribologists and Lubrication Engineers) Scholarship (July, 2017).

GEMSTONE Team (TEAM BACTERIA), mentored by Dr. Siddhartha Das, wins the best poster award in the Junior Year Level Poster presentation (April, 2017).
Mr. Joseph Andrews (Former M.S. student of Dr. Das) won the Department of Mechanical Engineering, UMD best M.S. Thesis award for 2016.
Dr. Shayandev Sinha (Former PhD student of Dr. Das) was selected for the 2017 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2016).
GEMSTONE Team (TEAM BACTERIA), mentored by Dr. Siddhartha Das won \$5000 UMD Sustainability Fund to support research involving the use of bacteria-produced enzymes for breaking asphaltene for heavy oil recovery (December, 2016).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) was selected for the Outstanding Graduate Assistant Award for 2015 offered by the Graduate School, University of Maryland (April, 2016).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) received the Kulkarni Graduate Student Summer Research Fellowship for Summer 2016 offered by the Graduate School, University of Maryland (April, 2016).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) was recognized by ASME for taking part in Family Day in Washington DC (March, 2016).
Dr. Shayandev Sinha (Former PhD student of Dr. Das) chosen as one among 37 students for serving in the ASME's International Petroleum Technology Institute Collegiate Council (December, 2015).
Dr. Guang Chen (Former PhD student of Dr. Das) selected for the 2016 Future Faculty Program of the A. James Clark School of Engineering School of University of Maryland, College Park (December, 2015).
Dr. Guang Chen (Former PhD student of Dr. Das) received the Northrup Grumman Graduate Fellowship in Engineering Education for the 2015-2016 academic year (November, 2015).
Dr. Guang Chen (Former PhD student of Dr. Das) was selected as a finalist in the Clean Energy Education & Empowerment (C3E) Women in Clean Energy symposium (October, 2015).

II.G.3. Journal Cover Articles

1. #V. S. Sivasankar, #S. A. Etha, #H. S. Sachar, and ***S. Das**, Thermoosmotic Transport in Nanochannels Grafted with pH-responsive Polyelectrolyte Brushes

- Modelled Using Augmented Strong Stretching Theory. *Journal of Fluid Mechanics*, 2021, Vol. 917, A31 (Selected as the Front Cover for the June 26, 2021 issue of the Journal of Fluid Mechanics).
2. #E. Wagemann, #Y. Wang, **S. Das**, and S. K. Mitra, "On the Wetting Translucency of Hexagonal Boron Nitride." *Physical Chemistry Chemical Physics*, 2020, Vol. 22, pp. 7710-7718 (Selected as the Back Cover for the April 21, 2020 issue of the journal Physical Chemistry Chemical Physics)
 3. #H. S. Sachar, #V. S. Sivasankar, and ***S. Das**, Revisiting the Strong Stretching Theory for pH-Responsive Polyelectrolyte Brushes: Effects of Consideration of Excluded Volume Interactions and an Expanded Form of the Mass Action Law. *Soft Matter*, 2019, Vol. 15, pp. 559-574 (Selected as the Back Cover for the January 28, 2019 issue of the journal Soft Matter)
 4. #G. Chen, #Y. Gu, H. Tsang, *D. R. Hines, and ***S. Das**, The effect of droplet sizes on overspray in aerosol-jet printing. *Advanced Engineering Materials*, 2018, Vol. 20, pp. 1701084(1-13). (Selected as the Back Cover for the August 2018 issue of the journal).
 5. #H. Jing, #S. Sinha, and ***S. Das**, Elasto-electro-capillarity: Drop equilibrium on a charged, elastic solid. *Soft Matter*, 2017, Vol. 13, pp. 554-566. (Selected as the inside back cover article in the January 21, 2017 issue of the journal Soft Matter)
 6. #J. Andrews, #S. Sinha, P. W. Chung, P. W., and ***S. Das**, Wetting dynamics of a water nanodrop on graphene. *Physical Chemistry Chemical Physics*, 2016, Vol. 18, pp. 23482–23493. (Selected as the inside front cover article in the September 14, 2016 issue of the journal Physical Chemistry Chemical Physics).
 7. K. McDaniel, F. Valcius, J. Andrews, and ***S. Das**, Electrostatic potential distribution of a soft spherical particle with a charged core and pH-dependent charge density. *Colloids and Surfaces B: Biointerfaces*, 2015, Vol. 127, pp. 143–147 (Selected as the cover article in the March 2015 issue of the journal Colloids and Surfaces B: Biointerfaces).
 8. P. R. Waghmare, **S. Das**, and S. K. Mitra, Drop deposition on under-liquid low energy surfaces. *Soft Matter*, 2013, Vol. 9, pp. 7437–7447 (Selected as the Front Cover Article in the August 21, 2013 issue of the journal Soft Matter).

II.G.4. News Stories on Research and Awards of Dr. Das and his students

Dr. Shayandev Sinha (former Ph.D. student of Prof. Siddhartha Das) who is currently working as an engineer at INTEL, featured as a young engineer at the semiconductor Industry in the "Diversity in Action" magazine

Year: 2022

<https://mydigitalpublication.com/publication/?m=46265&i=757942&p=74&ver=html5>

Prof. Das' election as the Fellow of the Institution of Engineering Technology

Year: 2022

<https://calce.umd.edu/prof-siddhartha-das-elected-fellow-institution-engineering-and-technology-uk>

***The Journal of Physical Chemistry Letters* paper on the Use of Localized Heating for Mixing and Imbibition of Nanoconfined Mixture of Immiscible Liquids**

Year: 2022

<https://enme.umd.edu/news/story/das-studies-interactions-of-nanochannelconfined-liquids>

Renewal of the U.S. Department of Energy Grant for Supporting Polymer Research in Prof. Das' Group

Year: 2022

<https://enme.umd.edu/news/story/us-doe-renews-funding-for-polymer-research>

<https://eng.umd.edu/news/story/us-doe-renews-funding-for-polymer-research>

DOE Twitter Handle: <https://twitter.com/doescience/status/1496532836173635588>

***ACS Nano* paper on the MD simulations on *Electroslippage Effect* in Nanochannels Grafted with Polyelectrolyte Brushes**

Year: 2021

<https://enme.umd.edu/news/story/das-publishes-new-work-in-acn-nano>

<https://eng.umd.edu/news/story/das-publishes-new-work-in-acn-nano>

Turash Haque Pial's selection to receive STLE Fellowship

Year: 2021

<https://enme.umd.edu/news/story/graduate-student-receives-stle-scholarship>

***Journal of Fluid Mechanics* Front Cover Article**

Year: 2021

<https://enme.umd.edu/news/story/a-new-theory-of-liquid-transport-in-functionalized-nanochannels>

<https://eng.umd.edu/news/story/a-new-theory-of-liquid-transport-in-functionalized-nanochannels>

***ACS Nano* paper on the MD simulations on Overscreening and Electroosmotic Transport in Nanochannels Grafted with Polyelectrolyte Brushes**

Year: 2021

https://www.eurekalert.org/pub_releases/2021-04/uom-sia041921.php

<https://phys.org/news/2021-04-ionic-behaviors-functionalized-nanochannels.html>

<https://www.sciencedaily.com/releases/2021/04/210419182045.htm>

<https://www.nano.gov/node/3665>

<https://samacharcentral.com/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>

<https://wilfredosantagoblog.wordpress.com/2021/04/20/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>

https://flipboard.com/@science_x/phys-org-ti3o1bi9z/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/a-6zfbEpjmRVim2qX06RPBCq%3Aa%3A2530880263-b5077e7ca9%2Fphys.org

<https://4state.news/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>
<https://www.dailyadvent.com/news/8e40f4507bc1b42ac355871362711ac2-Surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels>
<https://www.dailyadvent.com/news/60e672c63169ba37299574704ccd0d6a-Surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels>
<http://dominik-tarczynski24hat.eu/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels.htm>
<http://bridge-stage.occipital.com/books/content.php?filename=surprising.ionic.and.flow.behaviors.with.functionalized.nanochannels&pub=c0a1bb123ed864b53ccc1867dce654e7>
<https://newsbeezer.com/singapore/surprising-ion-and-flow-behavior-with-functionalized-nanochannels/>
<https://teknodate.com/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>
<https://scienmag.com/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>
<https://fulfilledmedia.com/surprising-ionic-and-flow-behaviors-with-functionalized-nanochannels/>
<https://mindzilla.com/newsroom/technology/nanotechnology/46249/20210420-surprising-ionic-and-flow-behaviours-with-functionalized-nanochannels/>

Prof. Das' selection as Emerging Investigator in Physical Chemistry Chemical Physics

Year: 2021

<https://enme.umd.edu/news/story/pccp-recognizes-das-as-emerging-investigator>
<https://eng.umd.edu/news/story/pccp-recognizes-das-as-emerging-investigator>

Prof. Das' election as a Fellow of the Institute of Physics

Year: 2021

<https://enme.umd.edu/news/story/das-named-institute-of-physics-fellow>
<https://eng.umd.edu/news/story/das-named-institute-of-physics-fellow>

Ph.D. Student Harnoor Singh Sachar's selection as the Finalist of the Frank J. Padden Jr. Award

Year: 2020

<https://enme.umd.edu/news/story/phd-student-harnoor-singh-sachar-selected-as-finalist-for-frank-j-padden-jr-award>

Cell Reports Physical Science paper on Water-free Localization of Anions at Anode Using Boron Nitride Nanotubes

Year: 2020

<https://eng.umd.edu/news/story/envisaging-a-better-lithium-batteryhellipwith-nanotech>
<https://enme.umd.edu/news/story/envisaging-a-better-lithium-batteryhellipwith-nanotech?fbclid=IwAR3TEQSkTxdWtt8GiREE4K9e9MoiMLBZB4Fb6p7m1wMpZrOYyl7dVT-qYTU>

***Nucleic Acids Research* paper on Molecular Dynamics Simulation on Mismatch Effect on Localization of DNA Plectoneme**

Year: 2020

<https://eng.umd.edu/news/story/umd-coleads-study-that-could-aid-identification-of-cell-defects?fbclid=IwAR0viS1IHbijSMFjMPrqBmOUcy8PEWjfa-zPm2aQkTCGGkDSKSOymaLxfm0>

https://enme.umd.edu/news/story/umd-coleads-study-that-could-aid-identification-of-cell-defects?fbclid=IwAR0fK7W5tQqd-OTr1ykpdi0oAKz75tF4okKKv_fnpD-GbjjhwQo58aj-rpA

Prof. Das' selection to participate in University of Maryland's inaugural cohort of the Research Leaders Fellows Program

Year: 2020

<https://today.umd.edu/briefs/program-prepare-future-research-leaders-announces-inaugural-cohort-57596f9c-22e5-4cd5-af49-90d31aa529fb?fbclid=IwAR1gjKpL7u1FcocYVmkmrUaFTsi8ESA4-X8Gc4iNH7pVQui5WuI5i0AqXnw>

Announcement of the ARL Funding on Additive Manufacturing (Prof. Das is a part of a team that received this funding)

Year: 2020

https://eng.umd.edu/news/story/umd-engineering-receives-228m-from-us-army-to-collaboratively-advance-additive-manufacturing-technology?fbclid=IwAR00D_SUOdtXzuXWfw9tgbvb8bRUIUQC7gE6ONvyTpetp6KXRvLjfaTPBE

***Matter* Paper on All-atom MD simulations of polyelectrolyte brushes and the induced ultraconfinement effect**

Year: 2020

https://umdrighnow.umd.edu/news/umd-researchers-use-simulation-tool-observe-molecular-behavior?fbclid=IwAR0VSH8jEdpauCZZj09B1zOEvyw8AlpCoFfCb-rQk5h0LdV_G8C2bNNhpsc

<https://enme.umd.edu/news/story/umd-researchers-to-publish-study-on-polyelectrolyte-brushes>

Prof. Das' Election to the Royal Society of Chemistry as a Fellow

Year: 2019

<https://enme.umd.edu/news/story/das-admitted-as-fellow-to-the-royal-society-of-chemistry>

Name appeared in January 7, 2020 Edition of THE TIMES newspaper published in the U.K.

Matter Paper on Drop Behaving as a Nanoparticle in Elastocapillary Action

Year: 2019

<https://eng.umd.edu/news/story/umd-researchers-discover-nanoparticlelike-behavior-of-a-liquid-drop-acts-like-velcro-on-specially>

<https://enme.umd.edu/news/story/umd-researchers-discover-nanoparticlelike-behavior-of-a-liquid-drop-acts-like-velcro-on-specially>

Nature Materials Paper on Thermoelectricity Generation in Wood

Year: 2019

<https://www.sciencedaily.com/releases/2019/03/190325163014.htm>

https://www.eurekalert.org/pub_releases/2019-03/uom-urw032519.php

<https://phys.org/news/2019-03-wood-based-technology-electricity.html>

<https://www.nanowerk.com/nanotechnology-news2/newsid=52444.php>

http://www.nanotech-now.com/news.cgi?story_id=55576

<https://www.freepressjournal.in/technology/wood-based-flexible-tech-creates-electricity-from-body-heat/1490778>

https://www.business-standard.com/article/pti-stories/wood-based-flexible-tech-creates-electricity-from-body-heat-119032700367_1.html

<https://www.rdmag.com/news/2019/03/umd-led-researchers-wood-based-technology-creates-electricity-heat>

<https://indianexpress.com/article/technology/science/wood-based-flexible-tech-creates-electricity-from-body-heat-5646775/>

<https://energy.economictimes.indiatimes.com/news/power/wood-based-flexible-tech-creates-electricity-from-body-heat/68594047>

<https://www.ecnmag.com/news/2019/03/using-wood-generate-electricity-heat>

<https://eng.umd.edu/news/story/woodbased-technology-creates-electricity-from-heat>

<https://today.umd.edu/briefs/wood-based-technology-creates-electricity-heat-2eaff663-fad9-44d4-ba28-9b62489ccc88>

<https://www.nature.com/articles/d41586-019-03767-y>

Back Cover Article of *Soft Matter*

Year: 2019

<https://enme.umd.edu/news/story/clark-school-research-featured-on-back-cover-ofnbspsoft-matter>

<https://eng.umd.edu/news/story/clark-school-research-featured-on-back-cover-ofnbspsoft-matter>

Haoyuan Jing's selection to Future Faculty Program for 2017-2018

Year: 2019

<https://enme.umd.edu/news/story/eight-mechanical-engineering-students-accepted-to-future-faculty-program>

Parth Desai's selection to receive STLE Fellowship

Year: 2018

<https://enme.umd.edu/news/story/desai-and-kaushik-receive-stle-fellowshipnbsp>

<p>JACS paper of Dr. Siddhartha Das Year: 2018 https://enme.umd.edu/news/news_story.php?id=11637</p>
<p>APL paper of Dr. Siddhartha Das Year: 2018 http://enme.umd.edu/news/news_story.php?id=11347</p>
<p>PRE paper of Dr. Siddhartha Das Year: 2018 https://eng.umd.edu/news/story/new-research-on-polyelectrolyte-brush-bilayers-published-in-pre http://enme.umd.edu/news/news_story.php?id=11242</p>
<p>APL paper of Dr. Siddhartha Das Year: 2018 http://www.enme.umd.edu/news/news_story.php?id=11046</p>
<p>Yanbin Wang's selection to Future Faculty Program for 2017-2018 Year: 2017 http://enme.umd.edu/news/news_story.php?id=11060</p>
<p>Joule paper of Dr. Siddhartha Das Year: 2017 https://www.sciencedaily.com/releases/2017/11/171115130931.htm</p>
<p>Advanced Materials paper of Dr. Siddhartha Das Year: 2017 http://www.advancedsciencenews.com/natural-wood-clean-water/ https://www.sciencedaily.com/releases/2017/10/171010224556.htm http://enme.umd.edu/news/news_story.php?id=10851</p>
<p>APL paper of Dr. Siddhartha Das Year: 2017 http://enme.umd.edu/news/news_story.php?id=10748</p>
<p>NextFlex Funding of Dr. Siddhartha Das Year: 2017 http://enme.umd.edu/news/news_story.php?id=10591</p>
<p>ACS Nano paper of Dr. Siddhartha Das Year: 2017 http://indiatoday.intoday.in/story/now-wooden-filter-to-purify-water/1/948463.html http://www.business-standard.com/article/pti-stories/now-wooden-filter-to-purify-water-117050800523_1.html https://phys.org/news/2017-04-wood-filter-toxic-dye.html</p>

<http://www.woodworkingnetwork.com/technology/filtering-water-new-use-wood>
<http://www.brecorder.com/2017/05/08/347469/wood-can-now-be-used-to-filter-water/>
<https://www.sciencedaily.com/releases/2017/05/170504173349.htm>
http://www.newswise.com/doescience/?article_id=674160&returnurl=aHR0cDovL3d3dy5uZXdzd2lzZS5jb20vYXJ0aWNsZXMvbGlzdA==
http://enme.umd.edu/news/news_story.php?id=10484
<http://eng.umd.edu/news/story/wood-filter-removes-toxic-dye-from-water>

NAVAIR Funding of Dr. Siddhartha Das

Year: 2017

http://enme.umd.edu/news/news_story.php?id=10367

Shayandev Sinha's selection to Future Faculty Program for 2016-2017

Year: 2017

http://enme.umd.edu/news/news_story.php?id=10356

Soft Matter Back Cover Article on Drop Statics on Charge, Elastic Substrate

Year: 2017

http://eng.umd.edu/html/news/news_story.php?id=10267

Selection of Dr. Siddhartha Das as Editorial Board Member of Scientific Reports

Year: 2017

http://www.enme.umd.edu/news/news_story.php?id=10266

GEMSTONE Team (Team BACTERIA) mentored by Dr. Siddhartha Das wins the \$5000 UMD Sustainability Fund

Year: 2016

http://enme.umd.edu/news/news_story.php?id=10157

http://eng.umd.edu/html/news/news_story.php?id=10157

Physical Chemistry Chemical Physics Inside Cover Article on Graphene's Wetting Dynamics

Year: 2016

http://www.enme.umd.edu/news/news_story.php?id=9929

Paper on Inverted Cheerios effect in drop-drop interactions on soft solid published in PNAS

Year: 2016

Article on extracrispy.com (Breakfast site of TIME Magazine):

<http://www.extracrispy.com/food/2048/how-cheerios-may-help-cure-cancer>

New York Times Article: [http://www.nytimes.com/2016/07/14/science/inverted-cheerios-effect-returns-physics-to-the-breakfast-](http://www.nytimes.com/2016/07/14/science/inverted-cheerios-effect-returns-physics-to-the-breakfast-table.html?rref=collection%2Fcolumn%2Ftrilobites&action=click&contentCollection=science®ion=stream&module=stream_unit&version=latest&contentPlacement=1&pgtype=collection)

[table.html?rref=collection%2Fcolumn%2Ftrilobites&action=click&contentCollection=science®ion=stream&module=stream_unit&version=latest&contentPlacement=1&pgtype=collection](http://www.nytimes.com/2016/07/14/science/inverted-cheerios-effect-returns-physics-to-the-breakfast-table.html?rref=collection%2Fcolumn%2Ftrilobites&action=click&contentCollection=science®ion=stream&module=stream_unit&version=latest&contentPlacement=1&pgtype=collection)

Clark's School Webpage: http://eng.umd.edu/html/news/news_story.php?id=9788
<http://phys.org/news/2016-06-scientists-inverted-cheerios-effect.html>
<https://www.utwente.nl/en/news/!/2016/6/68739/cereal-science-the-inverted-cheerios-effect>
<https://www.sciencedaily.com/releases/2016/06/160613153400.htm>
http://www.eurekalert.org/pub_releases/2016-06/qmuo-csh060916.php
http://enme.umd.edu/news/news_story.php?id=9744
<http://www.qmul.ac.uk/media/news/items/se/177892.html>
http://www.spacedaily.com/reports/Cereal_science_How_scientists_inverted_the_Ch_eerios_effect_999.html
<http://eoswetenschap.eu/artikel/ontbijtonderzoek-het-omgekeerde-cheerios-effect>
(Dutch)
<http://www.scienceandtechnologyresearchnews.com/cereal-science-inverted-cheerios-effect/>

Shayandev Sinha's participation in ASME's Family Day in Washington DC

Year: 2016

http://www.enme.umd.edu/news/news_story.php?id=9657
https://www.asme.org/about-asme/news/asme-news/section-takes-part-family-day-2016-washington-dc?utm_source=newsletters&utm_medium=email&utm_campaign=032516_asme_news

Selection of Guang Chen as 2016 Clark School Future Faculty

Year: 2016

http://www.enme.umd.edu/news/news_story.php?id=9630

Paper on nanomanufacturing of metal chalcogenides published in Scientific Reports

Year: 2016

http://enme.umd.edu/news/news_story.php?id=9569

Selection of Shayandev Sinha to ASME's International Petroleum Technology Institute Collegiate Council

Year: 2016

http://www.enme.umd.edu/news/news_story.php?id=9500
http://eng.umd.edu/html/news/news_story.php?id=9500

Guang Chen's selection as a Northrop Grumman Graduate Fellow

Year: 2015

http://www.enme.umd.edu/news/news_story.php?id=9418

Paper on bacterial floc streamer published in Scientific Reports

Year: 2015

<https://uofa.ualberta.ca/news-and-events/newsarticles/2015/september/researchers-observe-bacteria-behaving-badly>

Paper on soft wetting dynamics published in Nature Communications

Year: 2015

http://enme.umd.edu/news/news_story.php?id=9187

http://eng.umd.edu/html/news/news_story.php?id=9187

<http://www.utwente.nl/en/news/!/2015/8/412911/surfing-droplets-in-nature-communications>

<http://phys.org/news/2015-08-movement-droplets-soft-surfaces.html>

<http://www.nanowerk.com/nanotechnology-news/newsid=40979.php>

Cover Article on Soft Particle Electrostatics in Colloids and Surfaces B:

Biointerfaces

Year: 2015

http://www.enme.umd.edu/news/news_story.php?id=8958

http://eng.umd.edu/html/news/news_story.php?id=8958

Paper on Bacterial Biofilm Streamers published in Scientific Reports

Year: 2014

http://www.enme.umd.edu/news/news_story.php?id=8709

Cover Article on Drop Deposition published in Soft Matter

Year: 2013

<http://phys.org/news/2013-06-discovery-oil.html>

<http://www.redorbit.com/news/science/1112880889/glass-may-help-one-day-clean-up-oil-spills-062213/>

<http://www.mece.engineering.ualberta.ca/en/Research/Research/2013/August/UnderwaterDropDepositionCoverArticleinSoftMatter.aspx>

Paper on Underwater Superoleophobicity published in Scientific Reports

Year: 2013

<http://phys.org/news/2013-06-discovery-oil.html>

<http://www.redorbit.com/news/science/1112880889/glass-may-help-one-day-clean-up-oil-spills-062213/>

Coverage on Banting Postdoctoral Fellowship

Year: 2012

<http://www.engineering.ualberta.ca/en/NewsEvents/Engineering%20News/2012/September/BantingFellowshipbolstersresearchprojects.aspx>

III. Teaching, Extension, Mentoring, and Advising

III.A. Courses Taught

<p>Semester: Spring, 2022 Course: GEMSTONE (GEMS397) Number of Students: 8 Number of Students who Responded: 2 Role: Mentor Score: 4.0 <i>Note: The evaluation criteria were different as compared to the criteria used for evaluations for courses from all other previous semesters</i></p>
<p>Semester: Spring 2022 Course: Transfer Processes (ENME 332) Number of Students: 168 Number of Students who Responded: 32 Role: Instructor for Studio sections for the 1st half of the course and Instructor for lectures for the 2nd half of the course Score: 2.4 <i>Note: The evaluation criteria were different as compared to the criteria used for evaluations for courses from all other previous semesters</i></p>
<p>Semester: Fall, 2021 Course: GEMSTONE (GEMS397) Number of Students: 8 Number of Students who Responded: 1 Role: Mentor Score: 4.0</p>
<p>Semester: Fall, 2021 Course: Transfer Processes (ENME 332) Number of Students: 135 Number of Students who Responded: 44 Role: Instructor for 3 Studio sections Score: 3.1</p>
<p>Semester: Spring, 2021 Course: GEMSTONE (GEMS397) Number of Students: 11 Number of Students who Responded: 3 Role: Mentor Score: 3.9</p>

<p>Semester: Spring, 2021 Course: Fluid Mechanics (ENME 331) Number of Students: 118 Number of Students who Responded: 26 Role: Instructor for 3 Studio sections Score: 3.21</p>
<p>Semester: Fall, 2020 Course: GEMSTONE (GEMS396) Number of Students: 12 Number of Students who Responded: 7 Role: Mentor Score: 3.8</p>
<p>Semester: Fall, 2020 Course: Printed Electronics (ENPM 0808P) Number of Students: 5 Number of Students who Responded: 3 Role: Instructor Score: 3.9</p>
<p>Semester: Fall, 2020 Course: Fluid Mechanics (ENME 331) Number of Students: 180 Number of Students who Responded: 51 Role: Instructor for 4 Studio sections Score: 2.94</p>
<p>Semester: Spring, 2020 Course: Fluid Mechanics (ENME 331) Number of Students: 103 Number of Students who Responded: 26 Role: Instructor for 3 Studio sections Score: 3.04</p>
<p>Semester: Spring, 2020 Course: ADV TOPIC MECH ENG (INTERFACIAL FLUID MECHANICS) (ENME 808I) Number of Students: 6 Number of Students who Responded: 4 Role: Instructor Score: 3.5</p>
<p>Semester: Spring, 2020 Course: GEMSTONE (GEMS297) Number of Students: 12</p>

<p>Number of Students who Responded: 4 Role: Mentor Score: 3.7</p>
<p>Semester: Fall, 2019 Course: Fluid Mechanics (ENME 331) Number of Students: 168 Number of Students who Responded: 55 Role: Instructor for Lectures Score: 2.80</p>
<p>Semester: Fall, 2019 Course: GEMSTONE (GEMS296) Number of Students: 13 Number of Students who Responded: 7 Role: Mentor Score: 3.2</p>
<p>Semester: Spring, 2019 Course: Fluid Mechanics (ENME 331) Number of Students: 130 Role: Instructor for Lectures Score: 3.33</p>
<p>Semester: Fall, 2018 Course: Fluid Mechanics (ENME 331) Number of Students: 59 Role: Instructor for 2 Studio sections (ENME 331 0101 and ENME 331 0103) Score: 3.27</p>
<p>Semester: Spring, 2018 Course: GEMSTONE Team Project Number of Students: 11 Role: Mentor Score: 3.24</p>
<p>Semester: Spring, 2018 Course: Fluid Mechanics (ENME 331) Number of Students: 122 Role: Instructor for Lectures Score: 3.05</p>
<p>Semester: Fall, 2017 Course: ADV TOPIC MECH ENG (INTERFACIAL FLUID MECHANICS) (ENME 808I) Number of Students: 9</p>

<p>Role: Instructor Score: 3.4</p>
<p>Semester: Fall, 2017 Course: GEMSTONE Team Project (GEMS297) Number of Students: 11 Role: Mentor Score: 2.8</p>
<p>Semester: Spring, 2017 Course: GEMSTONE Team Project (GEMS297) Number of Students: 10 Role: Mentor Score: 2.98</p>
<p>Semester: Spring, 2017 Course: Fluid Mechanics (ENME 331) Number of Students: 140 Role: Instructor for Lectures Score: 2.94</p>
<p>Semester: Fall, 2016 Course: GEMSTONE Team Project (GEMS297) Number of Students: 11 Role: Mentor Score: 3.21</p>
<p>Semester: Fall, 2016 Course: Fluid Mechanics (ENME 331) Number of Students: 60 Role: Instructor for 2 Studio sections Score: 3.00</p>
<p>Semester: Spring, 2016 Course: GEMSTONE Team Project (GEMS297) Number of Students: 11 Role: Mentor Score: 3.28</p>
<p>Semester: Spring, 2016 Course: Fluid Mechanics (ENME 331) Number of Students: 79 Role: Instructor for 3 Studio sections Score: Not available as evaluation was not conducted by the Department</p>
<p>Semester: Fall, 2015 Course: Vibration, Controls and Optimization I (ENME 361)</p>

Number of Students: 115 Role: Instructor Score: 3.46
Semester: Spring, 2015 Course: Fluid Mechanics (ENME 331) Number of Students: 46 Role: Instructor for 2 Studio sections Score: 3.27
Semester: Fall, 2014 Course: Vibration, Controls and Optimization I (ENME 361) Number of Students: 98 Role: Instructor Score: 2.84

III.B. Advising: Research

Summary

Completed Advising: 7 Postdocs; 7 PhDs; 5 MS (A total of 4 more Ph.D. students are expected to graduate by Spring of 2023)

Currently Advising: 10 PhDs; 2 MS

Number of Faculty Placements for Advised Graduate Students and Postdocs: 3

III.B.1. Master's

III.B.1.1. Completed (Total Number: 5)

- Name of the Student:** Vishal Sankar Sivasankar
Period Involved: January 2019 to August 2020
Thesis Title: Electrokinetic Transport in Nanochannels Grafted with Backbone Charged Polyelectrolyte Brushes
Current Placement of the Student: Ph.D. Student with Prof. Siddhartha Das, University of Maryland
- Name of the Student:** Neil Dalal
Period Involved: August, 2017 to November, 2018
Advisor: Abhijit Dasgupta, Professor, Department of Mechanical Engineering, University of Maryland
Co-Advisor: Siddhartha Das

Thesis Title: Influence of Gas Flow Rates on Trace Quality and Reliability in a Selected Conductor Ink Printed with an Aerosol Jet Printer

Current Placement of the Student: Applied Physics Laboratory, Johns Hopkins University

3. **Name of the Student:** Jahin Patwary
Period Involved: August, 2014 to August, 2018
Thesis Title: Energy Conversion in Nanochannels Grafted with Polyelectrolyte and Polyzwitterion Brushes
Current Placement of the Student: Industry
4. **Name of the Student:** Raja Sampath Maheedhara
Period Involved: March, 2017 to July, 2018
Thesis Title: Enhanced Diffusioosmosis and Thermoosmosis in Polyelectrolyte-brush-functionalized Nanochannels
Current Placement of the Student: Unknown
5. **Name of the Student:** Joseph Andrews
Period Involved: August, 2015 to August, 2016
Co-Adviser: Dr. Peter W. Chung, Associate Professor, Department of Mechanical Engineering, University of Maryland
Thesis Title: *Wetting of Graphene*
Current Placement of the Student: Employed as *Radar Systems Engineer* in *Technology Service Corporation, Silver Spring, MD*

III.B.1.2. Ongoing (Total Number: 2)

1.	Name of the Student: Arka Bera Period Involved: August 2022 to Present
2.	Name of the Student: Arjun Aravind Palat Meethale Period Involved: August 2022 to Present

III.B.2. Doctoral

III.B.2.1. Completed (Total Number: 7)

1. **Name of the Student:** Parth Rakesh Desai
Period Involved: January, 2017 to May, 2022
Thesis Title: Effect of Mismatched Base Pairs on DNA Plectonemes

First Placement of the Student after leaving the group: Postdoctoral Researcher in the Department of Physics at Northwestern University (Advisor: Prof. John Marko)

Current Placement of the Student (if known): Same as the first placement

2. **Name of the Student:** Md. Turash Haque Pial
Period Involved: January, 2019 to May, 2022
Thesis Title: Atomistic Exploration of Densely-Grafted Polyelectrolyte Brushes: Effect of Applied Electric Field and Multivalent Screening Counterions
First Placement of the Student after leaving the group: Postdoctoral Researcher in the Department of Materials Science and Engineering at Northwestern University (Advisor: Prof. Monica Olvera de la Cruz)
Current Placement of the Student (if known): Same as the first placement
3. **Name of the Student:** Harnoor Singh Sachar
Period Involved: August, 2018 to May, 2021
Thesis Title: Atomistic and Theoretical Description of Liquid Flows in Polyelectrolyte-brush-grafted Nanochannels
First Placement of the Student after leaving the group: Postdoctoral Researcher in the Department of Chemical Engineering at the University of Texas at Austin (Advisor: Prof. Venkat Ganesan)
Current Placement of the Student (if known): Same as the first placement
4. **Name of the Student:** Haoyuan Jing
Period Involved: January, 2017 to December, 2020
Thesis Title: Phospholipid Behavior and Dynamics in Curved Biological Membranes
First Placement of the Student after leaving the group: Postdoctoral Researcher at the School of Medicine, Johns Hopkins University working with Prof. Jian Liu (starting from January, 2021)
Current Placement of the Student (if known): Same as the first placement
5. **Name of the Student:** Yanbin Wang
Period Involved: August, 2016 to November, 2019
Thesis Title: *Water, Ion, and Graphene: An Odyssey through the Molecular Simulations*
First Placement of the Student after leaving the group: Employed as a Postdoc (advised by Prof. Siddhartha Das) in *Scholar-in-Residence* (SIR) program in U.S. Food and Drug Administration supported by Prof. Das' NSF-SIR funding.
Current Placement of the Student (if known): Postdoctoral Researcher in the Department of Mechanical Engineering, Purdue University working with Prof. Tian Li (starting from January 2021).
6. **Name of the Student:** Shayandev Sinha
Period Involved: January, 2015 to July, 2018
Thesis Title: *Bilayer Membrane Electrostatics and charge-regulated membrane-*

nanoparticle interactions

First Placement of the Student after leaving the group: Employed as a Postdoc at Harvard University and Harvard Medical School (Postdoctoral Advisers: Dr. Nate Cirra and Dr. Prof. Hyungsoon Im)

Current Placement of the Student (if known): Scientist, Intel Corporation

7. **Name of the Student:** Guang Chen
Period Involved: August, 2014 to January, 2017
Thesis Title: *Nanoconfined Polyelectrolyte Brushes: Thermodynamics, Electrostatics and Transport*
First Placement of the Student after leaving the group: Employed as a Postdoc at Princeton University working with Prof. Howard Stone
Current Placement of the Student (if known): Employed as an Assistant Professor in the Department of Advanced Manufacturing and Robotics, College of Engineering, Peking University, China
Webpage: <https://en.coe.pku.edu.cn/faculty/facultyaz/926688.htm>

III.B.2.2. Ongoing (Total Number: 9)

1.	Name of the Student: Tanmay Sarkar Akash Period Involved: August 2022 to Present
2.	Name of the Student: Swarup Kumar Subudhi Period Involved: January 2022 to Present
3.	Name of the Student: Ghansham Rajendrasingh Chandel Period Involved: August 2021 to Present
4.	Name of the Student: Raashiq Ishraaq Period Involved: August 2021 to Present
5.	Name of the Student: Mihirkumar Prajapati Period Involved: January 2021 to Present
6.	Name of the Student: Vishal Sankar Sivasankar Period Involved: August 2020 to Present Status: Expected to Graduate by Spring 2023
7.	Name of the Student: Bhargav Chava Period Involved: January 2020 to Present Status: Expected to Graduate by Spring 2023
8.	Name of the Student: Ankit Sai Etha Period Involved: January 2019 to Present Status: Expected to Graduate by Spring 2023

9.	<p>Name of the Student: Beihan Zhao Period Involved: January 2019 to Present Co-Advisor: Abhijit Dasgupta Professor, Department of Mechanical and Engineering, University of Maryland Status: Expected to Graduate by Fall 2022</p>
10.	<p>Name of the Student: Jaemi Herzberger Period Involved: November, 2014 to Present Advisor: Dr. Abhijit Dasgupta, Professor, Department of Mechanical and Engineering, University of Maryland Co-Advisor: Siddhartha Das</p>

III.B.3. Post-doctoral

III.B.3.1. Completed (Total Number: 7)

1.	<p>Name of the Postdoc: Xiao Zhang Period Involved: April, 2021 to August, 2022 Research Area: 3D-printed electronics on textiles First Placement of the Student after leaving the group: Researcher at the Johns Hopkins University Current Placement of the Student: Same as the first placement</p>
2.	<p>Name of the Postdoc: Turash Haque Pial Period Involved: June, 2022 to July, 2022 Research Area: Atomistic Modeling of Polyelectrolyte Brushes First Placement of the Student after leaving the group: Postdoctoral Researcher in the Department of Materials Science and Engineering at Northwestern University (Advisor: Prof. Monica Olvera de la Cruz) Current Placement of the Student: Same as the first placement</p>
3.	<p>Name of the Postdoc: Yanbin Wang Period Involved: January, 2020 to December, 2020 Research Area: Micro-fluidic Transport in 3D-printed Microchannels First Placement of the Student after leaving the group: Employed as a Postdoc in the Department of Mechanical Engineering, Purdue University working with Prof. Tian Li (starting from January 2021). Current Placement of the Student: Same as the first placement</p>
4.	<p>Name of the Postdoc: Chenglin Yi Period Involved: December, 2018 to November, 2020 Research Area: 3D-printed electronics First Placement of the Student after leaving the group: Current Placement of the Student (if known): Employed as an Assistant Professor in the School of Mechanical Engineering, Northwestern Polytechnical University, China.</p>

	<p>Current Placement of the Student: Same as the first placement Webpage: https://scholar.google.com/citations?user=r_1L-WQAAAAAJ&hl=en</p>
5.	<p>Name of the Postdoc: Enrique Wagemann Period Involved: March, 2019 to February, 2020 Research Area: Molecular Dynamics Simulations for Water-2D-material Interactions First Placement of the Student after leaving the group: Assistant Professor in the Department of Mechanical Engineering (Departamento de Ingeniería Mecánica) at Universidad de Concepción, Chile Current Placement of the Student: Same as the first placement Other Information: Enrique was based in the University of Waterloo in the group of Prof. Sushanta K. Mitra and was jointly advised by Prof. Mitra and Prof. Siddhartha Das.</p>
6.	<p>Name of the Postdoc: Guang Chen Period Involved: March, 2017 to February 2018 Research Area: Numerical modeling of 3D printing First Placement of the Student after leaving the group: Employed as a Postdoc at Princeton University working with Prof. Howard Stone Current Placement of the Student (if known): Employed as an Assistant Professor in the Department of Advanced Manufacturing and Robotics, College of Engineering, Peking University, China Webpage: https://en.coe.pku.edu.cn/faculty/facultyaz/926688.htm</p>
7.	<p>Name of the Postdoc: Yuan Gu Period Involved: October, 2016 to November, 2018 Research Area: 3D-printed electronics First Placement of the Student after leaving the group: Industry (Electronic Ink) Current Placement of the Student: Same as the first placement</p>

IV. Service and Outreach

IV.A. Editorships, Editorial Boards, and Reviewing Activities

IV.A.1. Editorial Boards and Editorships

1. Serving as the co-Editor of the special issue titled “***Charged Polymeric Systems: Theories, Simulations, and Measurements***” for the journal ***Frontiers in Chemistry***.
2. Serving as the Review Editor of the “**Lab-on-a-Chip Devices**” section of the journal ***Frontiers in Sensors***
3. Scientific Reports (Fluids and Plasma Physics Category; January, 2017 to Present) (5) (*Numbers inside the bracket refer to the total number of papers to which Dr. Das served as the editor*)

IV.A.2. Reviewing Activities for Journals

Served as Reviewer to Articles submitted to the Following Journals (Numbers inside the bracket refer to the total number of papers reviewed for the journal)

1. Science (1)
2. Proceedings of the National Academy of Sciences USA (1)
3. Nature Communication (1)
4. Advanced Materials (2)
5. ACS Applied Materials and Interfaces (3)
6. Macromolecules (5)
7. ACS Nano (2)
8. The Journal of Physical Chemistry Letters (1)
9. Extreme Mechanics Letters (1)
10. The Journal of Physical Chemistry (7)
11. Analytical Chemistry (1)
12. Electrophoresis (5)
13. Soft Matter (7)
14. Scientific Reports (8)
15. Additive Manufacturing (1)
16. Microfluidics and Nanofluidics (8)
17. Colloids and Surfaces B (1)
18. Colloids and Surfaces A (1)
19. Journal of Fluid Mechanics (6)
20. Chemical Engineering Science (1)
21. Microvascular Research (1)
22. Physics of Fluids (2)
23. Langmuir (6)
24. AIP Advances (1)

25. ASME Journal of Fluids Engineering (5)
26. ASME Journal of Heat Transfer (3)
27. Physical Review E (9)
28. Proceedings of the Royal Society A (1)
29. Industrial and Engineering Chemistry Research (1)
30. Nano Letters (1)
31. Journal of Polymer Science (1)
32. Physical Review Fluids (3)
33. RSC Advances (1)
34. Physical Chemistry Chemical Physics (2)
35. Chemical Physics Letters (1)
36. Soil Science Society of America Journal (1)

IV.A.3. Reviewing Activities for Agencies and Foundations

Served as Reviewer to proposals submitted to the following agency/foundation (*Numbers inside the bracket refer to the total number of proposals from the agency/foundation reviewed*)

1. National Science Foundation (7)
2. Department of Energy (10)
3. Israel Science Foundation (1)
4. NextFlex (America's Flexible Hybrid Electronics Manufacturing Institute) (3)
5. Swiss research funding program of the ETH Domain (1)

IV.A.4. Serving as Panel Member for Agencies

1. Serving as a Panel member for reviewing the proposals for National Science Foundation (***Particulate and Multiphase Processes*** program of the ***Division of Chemical, Bioengineering, Environmental and Transport Systems*** (CBET)) (November, 2019).

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service – A. James Clark School of Engineering

Hiring Committee

Serving as a member of the Hiring Committee for the University of Maryland, College Park, A. James Clark School of Engineering search for multiple faculty positions at all levels in the interdisciplinary field of applied quantum science and technology (starting Spring, 2022).

Other Committee

Serving as the Member of the Engineering Senate (Fall, 2020 - Present)

IV.B.2. Campus Service – Department

Hiring Committee

Served as a member of the Hiring Committee for the Department of Mechanical Engineering search for multiple faculty positions at all levels in the fields of Robotics and Automation, Risk and Reliability, and Thermal Sciences (from Fall, 2021 to Spring, 2022).

PhD Thesis Defense Committee

1. Served as the Chair of the PhD thesis defense committee of Mr. Parth Rakesh Desai (April, 2022).
2. Served as the Chair of the PhD thesis defense committee of Mr. Md. Turash Haque Pial (March, 2022).
3. Served as the Chair of the PhD thesis defense committee of Mr. Harnoor Singh Sachar (April, 2021).
4. Served as the Chair of the PhD thesis defense committee of Mr. Haoyuan Jing (November, 2020).
5. Served as the Chair of the PhD thesis defense committee of Mr. Yanbin Wang (November, 2019).
6. Served as the member of the PhD thesis defense committee of Mr. Abraham S. Chen (December, 2018).
7. Served as the member of the PhD thesis defense committee of Mr. David C. Deisenroth (November, 2018).
8. Served as the member of the PhD thesis defense committee of Mr. Stefan Bangerth (July, 2018).
9. Served as the Chair of the PhD thesis defense committee of Mr. Shayandev Sinha (May, 2018).
10. Served as the member of the PhD thesis defense committee of Mr. Mohamed Raafat (July, 2017)
11. Served as the Chair of the PhD thesis defense committee of Ms. Guang Chen (December, 2016).
12. Served as the member of the PhD thesis defense committee of Mr. Hajid Alsupie (August, 2016).
13. Served as the member of the PhD thesis defense committee of Mr. Ratnesh Tiwary (January, 2015).

PhD Dissertation Proposal Committee

1. Served as the Chair of the Dissertation Proposal committee of Mr. Sai Ankit Etha (April, 2022).
2. Served as the Chair of the Dissertation Proposal committee of Mr. Vishal Sankar Sivasankar (April, 2022).
3. Served as the Chair of the Dissertation Proposal committee of Mr. Bhargav Sai Chava (November, 2021).
4. Served as the Chair of the Dissertation Proposal committee of Mr. Beihan Zhao (October, 2021).

5. Served as the Chair of the Dissertation Proposal committee of Mr. Md. Turash Haque Pial (July, 2021).
6. Served as the Chair of the Dissertation Proposal committee of Mr. Parth Rakesh Desai (August, 2020).
7. Served as the Chair of the Dissertation Proposal committee of Mr. Harnoor Singh Sachar (July, 2020).
8. Served as the Chair of the Dissertation Proposal committee of Mr. Haoyuan Jing (April, 2020).
9. Served as the Chair of the Dissertation Proposal committee of Mr. Yanbin Wang (May, 2019).
10. Served as the Chair of the Dissertation Proposal committee of Mr. Shayandev Sinha (November, 2017).
11. Served as the member of the PhD Dissertation Proposal committee of Mr. Mohamed Rafaat (June, 2016).
12. Served as the member of the PhD Dissertation Proposal committee of Mr. Hajid Alsupie (February, 2016).
13. Served as the Chair of the Dissertation Proposal committee of Ms. Guang Chen (February, 2016).
14. Served as the member of the PhD Dissertation Proposal committee of Ms. Jaemi Herzberger (May, 2015).

MS Thesis Defense Committee

1. Served as the Chair of the MS thesis defense committee of Mr. Vishal Sankar Sivasankar (August, 2020).
2. Served as the member of the MS thesis defense committee of Mr. Neil Dalal (November, 2018)
3. Served as the Chair of the MS thesis defense committee of Mr. Jahin Patwary (August, 2018).
4. Served as the Chair of the MS thesis defense committee of Mr. Raja Maheedhara (May, 2018).
5. Served as the Chair of the MS thesis defense committee of Mr. Raja Maheedhara (May, 2018).
6. Served as the Chair of the MS thesis defense committee of Mr. Joseph Andrews (August, 2016).
7. Served as the member of the MS thesis defense committee of Mr. Jason Christopher Thompson (November, 2015).
8. Served as the member of the MS thesis defense committee of Mr. Ning Yang (June, 2015).

Qualifying Exam Committee

1. Served as the member of the Qualifying examination committee of Mr. Mihirkumar Narendrakumar Prajapati (October, 2021).
2. Served as the member of the Qualifying examination committee of Mr. Vedant Kumar (October, 2021).
3. Served as the member of the Qualifying examination committee of Mr. Vishal Sankar Sivasankar (March, 2021).

4. Served as the member of the Qualifying examination committee of Mr. Ziteng Wen (March, 2021).
5. Served as the Chair of the PhD thesis defense committee of Mr. Haoyuan Jing (November, 2020).
6. Served as the member of the Qualifying examination committee of Mr. Sai Ankit Etha (October, 2020).
7. Served as the member of the Qualifying examination committee of Mr. Turash Haque Pial (October, 2020).
8. Served as the member of the Qualifying examination committee of Mr. Bhargav Sai Chava (October, 2020).
9. Served as the member of the Qualifying examination of Mr. Sangeeth Balakrishnan (October, 2020).
10. Served as the member of the Qualifying examination of Mr. Qiongyu Chen (October, 2020).
11. Served as the member of the Qualifying examination committee of Mr. Beihan Zhao (October, 2019).
12. Served as the member of the Qualifying examination of Mr. Dong-Hyun Cho (October, 2018).
13. Served as the member of the Qualifying examination of Mr. Rui Xu (October, 2017).
14. Served as the member of the Qualifying examination of Mr. David Catalini (March, 2017).
15. Served as the member of the Qualifying examination of Mr. Yanbin Wang (March, 2017).
16. Served as the member of the Qualifying examination of Mr. Haoyuan Jing (March, 2017).
17. Served as the member of the Qualifying examination of Mr. Parth Rakesh Desai (March, 2017).
18. Served as the member of the Qualifying examination of Mr. Francis G. Vangessel (March, 2017).
19. Served as the member of the Qualifying examination of Mr. Daniel Bae (November, 2016).
20. Served as the member of the Qualifying examination of Mr. Stefan Bangerth (November, 2015).
21. Served as the member of the Qualifying examination committee of Mr. Johnny Russo (October, 2015).
22. Served as the member of the Qualifying examination committee of Mr. Shayandev Sinha (October, 2015).
23. Served as the member of the Qualifying examination committee of Mr. Shing Shin (March, 2015).
24. Served as the member of the Qualifying examination committee of Ms. Guang Chen (March, 2015).
25. Served as the member of the Qualifying examination committee of Mr. Jason Robert Nixon (October, 2014).

Productivity Committee

Served as the member of the **Productivity Committee (Fall, 2016 to Fall 2017)**.

Faculty Advisory Committee

Served as the member of the **Faculty Advisory Committee (Fall, 2015 to Fall 2017)**.

IV.B.3. Professional Service (Service to Professional Societies and Others)

Roles in Improving the Functioning and Performance of Different Professional Societies

1. Contributed to the Functioning and Performance of the following societies as **Fellows of these Societies** by participating in various surveys as well as in elections.
 - a. Royal Society of Chemistry, U.K. (RSC)
 - b. Institute of Physics, U.K. (IoP)
2. Contributed to the Functioning and Performance of the following societies as **Members of these Societies** by participating in various surveys as well as in elections.
 - a. American Physical Society (APS)
 - b. Materials Research Society (MRS)
 - c. American Society of Mechanical Engineers (ASME)

Roles in Organizing Multi-University Seminar Series

1. Served as the member of the Organizing Committee for the **Frontiers in Mechanical Engineering and Sciences seminar series** (<https://sites.google.com/view/frontiersmes/>). This series involved 12 universities (Georgia Tech; Penn State; Purdue University; Texas A&M University; University of California-Los Angeles; University of Maryland; University of Michigan; University of Minnesota; University of Wisconsin-Madison; Princeton University; University of Notre Dame; University of Texas at Austin) and provided opportunities to tenure-track Assistant Professors to showcase their research work in front of global experts under the settings where in-person visits to different universities were not possible due to COVID-19 pandemic (Spring 2020 to Fall 2021).

Leadership Roles in Meetings and Conferences

1. Topic co-Chair for ASME IMECE 2022 - Topic 2-15 (3D/4D BioManufacturing & BioMaterials).
2. Chair of the Session titled “Microscale Non-Newtonian and Complex Flows II (session Z31)” in APS March Meeting, March 14–18, 2022, Chicago, IL.
3. Chair of the Session titled “Drops-I (session F11)” in APS March Meeting, March 14–18, 2022, Chicago, IL.
4. Co-Chair of the Session at the Symposium titled “BM03: Multi-scale Modeling of Soft-Materials and Interfaces” (Morning session, November 29, 2018) in 2018 Materials Research Society Fall Meeting and Exhibit, November 25 – November 30, 2018, Boston, MA.

5. Co-Chair of the Session at the Symposium titled “BM03: Multi-scale Modeling of Soft-Materials and Interfaces” (Afternoon session, November 26, 2018) in 2018 Materials Research Society Fall Meeting and Exhibit, November 25 – November 30, 2018, Boston, MA.
6. Co-organizer of the 19th Mid-Atlantic Soft Matter (MASM) Workshop held on February 2, 2018, College Park, MD.
7. Chair of the Session titled “Drops, Bubbles and Interfaces I” in APS March Meeting, March 13–17, 2017, New Orleans, LA.
8. Track Co-Chair for the track “Mechanics of Biological and Soft Materials” in Society of Engineering Science, 53rd Annual Technical Meeting, College Park, MD, October 4-7, 2016.
9. Chair of the Session titled “Drops, Bubbles and Interfacial Fluid Mechanics” in APS March Meeting, March 14–18, 2016, Baltimore, MD.
10. Chair of the Session titled “Soft Electrokinetics—Applications and Fundamentals” as a part of the Symposium “Wetting and Soft Electrokinetics” in 2015 Materials Research Society Fall Meeting and Exhibit, Boston, MA, November 29 - December 4, 2015.
11. Chair of the Session titled “Drops XII: Elastic Surfaces and Fibers” in 66th Annual Meeting of the APS Division of Fluid Dynamics, Pittsburgh, PA, November 24–26, 2013.
12. Co-Chair of the Special Track titled “Interfacial Tension, Capillarity, Surface Forces”, as a part of the 19th International Symposium on Surfactants in Solution (SIS2012), University of Alberta, Canada, June 24-28, 2012.

Leadership Role as an International Expert

1. Served as an International Expert on Additive Manufacturing and Advanced Functional Materials and served as a reviewer of a proposal submitted to Swiss research funding program of the ETH Domain