Nabila Shamim, Ph.D.
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Education

Ph.D. 2007 Doctor of Philosophy
Chemical and Biomolecular Engineering,
National University of Singapore.

B.Sc. 2002 Bachelors of Science
Chemical Engineering,
Bangladesh University of Engineering and Technology.

Professional Experience

Sep 2022 – Present Assistant Professor and Associate Head, Department of Chemical Engineering
Roy G. Perry College of Engineering, Prairie View A & M University

Sep 2018- Present Assistant Professor, Department of Chemical Engineering,
Roy G. Perry College of Engineering, Prairie View A & M University

Sep 2014- Aug 2018 Instructor, Department of Chemical Engineering,
Roy G. Perry College of Engineering , Prairie View A & M University

Jan 2012- May 2014 Instructor, Department of Chemical Engineering, Edward E. Whitacre Jr. College of Engineering, Texas Tech University Lubbock, TX

Jul 2008- Jun 2014 Postdoctoral Research Associate, Department of Chemical Engineering
Edward E. Whitacre Jr. College of Engineering, Texas Tech University

Jan 2003-2007 Graduate Research Assistant, Department of Chemical and Biomolecular Engineering, National University of Singapore

Professional Affiliation

- American Institute of Chemical Engineering (AIChE)
- Society of Black Engineers
- Society of Women Engineering (SWE)
- American Society for Engineering Education (ASEE), Gulf Southwest Section of ASEE (GSW ASEE)
- The Institution of Engineers, Bangladesh (IEB)

Research Interests

- Fabrication of Nanofibers and Characterization
- 3D Printed micro porous scaffolds
- Thermal Properties of electrospunned Nanofibers
- Transport in a porous membrane
- Thermal Properties of polymer and materials in confinement.

Honors and Awards

- Outstanding Early Researcher Award from Prairie View A & M University , 2022
- Service award for technical committee member of ASEE Gulf Southwest Conference, 2022
- Outstanding Research category award during the ORISP Inaugural Research Week April 2019.

E-Certificates:

- Certification of ASEE DELTA Junior Faculty Institute, 2021

- ***E-certification of online*** Materials Science Course, Nov 2021
- 2020 Junior Faculty-RISE Grant-Writing Program, November 19, 2020.
- Introduction to Teaching Online (ITO), Web-based Course, June 11, 2020.

Selected Journal Publication

1. Nabila Shamim, Anh Nuguyen, Sheena Reeves, and Ariful Bhuiyan, Work in Progress: Motivation and Interest on the Design and Optimization of 3D-Printed ABS and PLA Scaffolds, ASEE Publications, 2022, https://peer.asee.org/41221.
2. Joao Paulo Dias, Ariful Bhuiyan, **Nabila Shamim, Nabila** t Description of the Intercondylar Notch Curvature, ASME J of Medical Diagnostics, 2022, 5 (2) 021001 https://doi.org/10.1115/1.4053063
3. **N. Shamim,** S. Binzaid, J. F. Gabitto and J. Attia, A Combined Chemical-Electrochemical Process to Capture CO_2 and Produce Hydrogen and Electricity, Energies, 2021, 14 (18), 5807. https://doi.org/10.3390/en14185807
4. Morshed Khandaker, Helga Progri, Dhakshyane Tamil Arasu, Sadegh Nikfarjam, **Nabila Shamim**, Use of polycaprolactone electrospun nanofiber mesh in a face mask, Materials, 2021 Aug; 14(15): 4272 - 4289. https://doi.org/10.3390/ma14154272
5. Ariful Bhuiyan1, **Nabila Shamim**, and Stephen Ekwaro-Osir, Magnetic Resonance Image (MRI) Based Computational Modeling for Anterior Cruciate Ligament Response at Low Knee Flexion Angle, ASME J of Medical Diagnostics. Feb 2021, 4(1): 011001. https://doi.org/10.1115/1.4048701

Reports

1. Yen Maroney Lawrence; **Nabila Shamim** and Ananda Amarasekara*, Insight to Cellulose - Polycarboxylic Acid Intermolecular Interactions Using TG and DSC Thermal Analysis tools, Research Square, https://doi.org/10.21203/rs.3.rs-1220131/v1 .

Conference Procedings (Student Mentored Procedings)

1. Daisaku Gicheha, Morshed Khandaker, Nabila Shamim*, Physicochemical Properties of Poly (ε-caprolactone) (PCL) and MgO Incorporated PCL nanofibers, **ASEE** gulf southwest conference, American Society for Engineering Education, 2022, https://peer.asee.org/39196 .
2. Utomwen D. Irabor, and Nabila Shamim, Poly(ε-caprolactone) Nanofiber filter for better thermal comfort in Facemasks, **ASEE** gulf southwest conference, American Society for Engineering Education, 2022, https://peer.asee.org/39198.

Professional Conferences

1. Nabila Shamim, 639g Thermal Properties and Crystallinity of Poly (ε-caprolactone) (PCL) and MgO Incorporated PCL Nanofibers, Phoenix, AZ, Nov 17 2022.
2. Utomwen David Irabor, Ariful Bhuiyan and Nabila Shamim, Thermal Management in Commercially used Face Masks, AIChE Annual Meeting, Boston MA, Nov 7-11, 2021.
3. Nabila Shamim, Presenter, America East Symposium for Graduate Programs in Engineering and Computing, 2020.
4. Chloe Sanders, Lilia Yang, Ariful Bhuiyan, and Nabila Shamim, Mechanical and Thermal Properties of Electrospuned Polycaprolactone Nanofibers for Regeneration of ACL, AIChE annual meeting 2020, Virtual.

Student Presentations

1. Daisaku Gicheha and Nabila Shamim, 225c Non-Isothermal Crystallization Kinetics of Poly (ε-caprolactone) (PCL) and MgO Incorporated PCL Nanofibers, Phoenix, AZ, Nov 14 2022.
2. Utomwen D. Irabor and Nabila Shamim, Poly(ε-caprolactone) Nanofiber Filter for better Thermal Comfort in Facemasks, 2022 ASEE Gulf-Southwest Annual Conference, March 16-18 2022, Prairie View.

3. Daisaku Gicheha, Morshed Kandaker, and Nabila Shamim, Physicochemical Properties of Poly (ε-caprolactone) (PCL) and MgO Incorporated PCL nanofibers, 2022 ASEE Gulf-Southwest Annual Conference, March 16-18 2022, Prairie View.
4. Anh Duy Tu Nguyen, Nabila Shamim, Design Optimization of 3D-Printed ABS and PLA Scaffolds, 17th Annual Pathways Student Research Symposium. March 4-5 2022, TAMU, College Station.

Awarded External Grants

1. Funding Agency: **Department of Education**, Institutional Integration of Applied Thermal and Combustion Sciences into Engineering and Science Curricula by Engaging Experiments and Research Opportunities, CO-PI: Dr. Nabila Shamim, Total Amount: 749,997.00, Period of Performance: 10/01/2022 – 08/31/2025
2. Funding Agency: **NSF**, Research Initiation Award: Investigating the Kinetics of Vitrification and Crystallization of Electrospuned Nanofibrous Carrier for Improved Stability and Drug Loading Capacity, PI: Dr. Nabila Shamim, Total Amount: $300,000.00. Period of Performance: 08/15/2022-07/31/2025.
3. Funding Agency: **NSF,** Excellence in Research: Hybrid Ceramic Membrane Bioreactor and Reverse Osmosis Processes for the removal of Micro and Nano plastics from Municipal Wastewater, Co-PI: Dr. Nabila Shamim, Total Amount: $500000, Period of Performance: 09/1/2022-08/31/2025.
4. Funding Agency: **AFOSR**, Investigating the Kinetics of Vitrification and Crystallization of Energetic Materials using Flash Differential Scanning Calorimetry, PI: Nabila Shamim, Co-PI's: Dr. Osborne-Lee and Dr. Ananda Amarasekara, Total Amount: $ 458,220, Period of Performance: 07/15/2022-07/14/2025.
5. Funding Agency: **DURIP-AFOSR**, Thermal Fingerprinting of Energetic Materials using Flash Differential Calorimetry, PI: Nabila Shamim, Co-PI's: Dr. Osborne-Lee and Dr. Ananda Amarasekara, **Total Amount: $ 117,768.00, Awarded** . Period of Performance: 03/21/2022-03/20/2022

Synergistic Activities

- Co-ordinated with the STEM coordinator of Killough Middle School to participate at the Killough's College Day Event. February 28, 2023.
- Invited to to articulate the proposed curriculum items from Department to the Undergraduate Council, PVAMU, February 16 2023.
- Building a pipeline for PVAMU/HCC ENGR, February 8, 2023.
- STEM Event - Energy in Industry, January 28, 2023. The event is on Energy Careers in Industry in collaboration with UH's STEM Center. The program provides engagement in the sciences and engineering fileds. SUCCESS Recruitment event at KIPP Sunnyside, Feb 1 2023.
- Energy Day, Houston TX October 8 2022.

Service activities (within and outside of the institution):

Invited Presentations

1. Speaker Land Grant Series: Celebrating Excellence, March 2 2023.
2. Speaker, NanoX group, PVAMU February 21, 2020

Department

1. Associate Head, Department of Chemical Engineering, Sep 1, 2022.
2. Chair, Curriculum Committee, Sep 2022
3. Member, Recruitement and Outreach committee, Sep 2022
4. Research Mentor, PV S.T.E.P Summer Intern, 2022
5. Research Mentor Undergraduate Students participating in NASA summer project, 2021

College

1. Chair, Postdoc hiring committee, CEES

2. Member Roy *G. Perry College of Engineering Grievance committee* – 2022
3. Technical Committee Member, ASEE Gulf Southwest Conference 2022 , hosted by PVAMU.
4. Member Sorting and putting together the ConocoPhillips donated equipment to make the successful application. 2021-Present

University

1. Member Faculty Senate, Aug 2022- Pre. And 2016-2017
2. Reviewer, PRISE 2021 Proposals, PVAMU, August 2021
3. Presenter, R&D research partnership with Shell, presentation March 16, 2021

Local:

1. Organized the virtual STS AIChE University Student Scholarship to recognize the scholastic achievements in chemical engineering and long-term volunteerism in the local section March 2021 and 2020. Three chemical engineering students from PVAMU was awarded.
2. AIChE STS Executive Committee - Position 2 – Outreach Director (Faculty), 2019- 2021

National:

1. **Technical Committee Member**, ASEE Gulf Southwest Conference 2022
2. Session Chair, ASEE Gulf Southwest conference, 2022
3. Senior Member, American Institute of Chemical Engineers (AIChE)
4. Member, AIChE, Materials and Science Devision, Nov 2021
5. Reviewer, ASEE Gulf Southwest section Conference, March 16-18 2022.
6. Session Chair, **2022 ASEE GSW conference**, PVAMU, March 16-18 2022.
7. Member and HBCU Liaison, Minority Affairs Committee (MAC) of AIChE, (2022 – Present)
8. Reviewer MDPI Material, Energetics, 2020,2021

International:

1. Organized and volunteered a panel discussion on US Undergraduate College Admission: Development of Choices, BUET 95' North America platform, April 17, 2021.
2. Presenter, Transferring Values Learned from COVID-19 Challenges to Future, BDI virtual meeting, Oct, 2020

Select Professional Development Activities

1. **Faculty Success Workshop**, National Center for Faculty Development and Diversity, 2022
2. ASEE Annual Conference, Minneapolis, MN June 25-29 2022.
3. Tenure/Promotion Workshop, PVAMU, March 2022.
4. ASEE GSW Regional Meeting, Prairie View, TX, March 2022
5. AIChE Annual Meeting, Boston, MA, November 2021
6. ASEE DELTA Junior Faculty Institute certification training, March 24-26, 2021.
7. ASEE-NETI Active learning workshop, April 17-18, 2021.

Graduate Mentor (Project and Thesis)

Mr. Daisaku Gicheha- Sep 2021 – Present

- Thesis project: Physicochemical Properties of Poly (ε-caprolactone) (PCL) and MgO Incorporated PCL nanofibers

Ms. Veronica Williams Jan 2020 – July 2020 Chemist, Stolt-Nielsen Limited

- Project Proposal: Fabrication and Application of Polystyrene Nanofibers

Ms. Dwiesha Johnson Jan 2016-May 2016:

- Project Proposal: Surface-functionalized, Superparamagnetic nanoparticles for Removal of heavy metal from Drinking Water