

SOURAV DAS

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EDUCATION

Ph.D. in Mechanical Engineering <i>Purdue University</i>	January 2021 - Ongoing IN, United States
M.Sc. in Mechanical Engineering <i>The Ohio State University</i>	December 2020 OH, United States
B.Sc. in Mechanical Engineering <i>Bangladesh University of Engineering and Technology (BUET)</i>	September 2017 Dhaka, Bangladesh

RESEARCH EXPERIENCES

Graduate Research Assistant Department of Mechanical Engineering, Purdue University [Link]	January 2021 -
<ul style="list-style-type: none">• Full-field strain measurement of soft tissue for high-speed needle insertion using Digital Image Correlation (DIC) analysis• Automated tissue Feature identification from histology images	

Graduate Research Associate Department of Mechanical & Aerospace Engineering, The Ohio State University [Link]	January 2019 - July 2020
<ul style="list-style-type: none">• Performed design of functionally graded controllable porous structures using topology optimization• Designed optimized structures with symmetry and pattern gradation for multi-physics applications	

Undergraduate Research Assistant Multi scale Mechanical Modeling and Research Network (MMMRN) [Link]	2015 - 2018
<ul style="list-style-type: none">• Performed atomistic simulations to investigate the mechanical and thermal properties of stanene (two dimensional material) via Molecular Dynamics study	

TEACHING AND PROFESSIONAL EXPERIENCES

Graduate Teaching Associate Department of Mechanical & Aerospace Engineering, The Ohio State University	August 2020 - Present
<ul style="list-style-type: none">• Courses: Kinematics and Mechanism Design, Design and Analysis of Machine Elements I• Responsibilities: Conducted recitation sessions; held office hours; assisted faculty members with assignments, and exams	

Lecturer (on study leave) Department of Biomedical Engineering, Jashore University of Science and Technology, Bangladesh [Link]	September 2018 - December 2018
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Industrial intern Bangladesh Diesel Plant Limited, Gazipur, Bangladesh	February 2017
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JOURNAL PUBLICATIONS

1. **S.Das**, A.Sutradhar, Multi-physics topology optimization of functionally graded controllable porous structures: Application to Heat Dissipating Problems, *Materials & Design*, vol 193, August 2020. DOI: [10.1016/j.matdes.2020.108775](https://doi.org/10.1016/j.matdes.2020.108775)
2. **S.Das**, S. Mojumder, T. Rakib, M. M. Islam, M. Motalab, Atomistic Insights into Mechanical and Thermal Properties of Stanene with Defects, *Physica B: Physics of Condensed Matter*, vol. 553, pages 127-136, 2019. DOI: [10.1016/j.physb.2018.10.035](https://doi.org/10.1016/j.physb.2018.10.035)
3. T. Rakib, S. Mojumder, **S. Das**, S. Saha, M. Motalab, Graphene and its elemental analogue: A molecular dynamics view of fracture phenomenon, *Physica B: Physics of Condensed Matter*, vol. 515, pages 67-74, 2017. DOI: [10.1016/j.physb.2017.04.009](https://doi.org/10.1016/j.physb.2017.04.009)

CONFERENCE PUBLICATIONS

1. A. K. Roy, Md. F. Shahriar, G. K. Biswas, **S. Das**, S. Saha, M. Motalab, Relation between the Thermal Conductivity and Grain Size in a Polycrystalline Silicene Sheet, The 12th International Conference on Mechanical Engineering (ICME), 2017, available on *AIP Conference Proceedings*, 2018. DOI: [10.1063/1.5044354](https://doi.org/10.1063/1.5044354)
2. **S. Das**, T. Rakib, S. Mojumder, M. M. Islam, M. Motalab, Influence of defects on thermal properties of stanene, 7th BSME International Conference on Thermal Engineering (ICTE), available on *AIP Conference Proceedings*, 2016. DOI: [10.1063/1.4984664](https://doi.org/10.1063/1.4984664)
3. **S. Das**, T. Rakib, K.M. Rabbi, S. Mojumder, S. Saha. Non-isothermal heating and magnetic field effect on non-Newtonian power law fluid in triangular channel. International Conference on Mechanical Industrial and Materials Engineering (ICMIME), 2016. DOI: [10.13140/RG.2.1.2921.4801](https://doi.org/10.13140/RG.2.1.2921.4801)
4. P. Bose, T. Rakib, **S. Das**, K.M. Rabbi, S. Mojumder, MHD mixed convection analysis of non-Newtonian power law fluid in an open channel with round cavity. 7th BSME International Conference on Thermal Engineering (ICTE), available on *AIP Conference Proceedings*, 2016. DOI: [10.1063/1.4984686](https://doi.org/10.1063/1.4984686)
5. K.M. Rabbi, T. Rakib, **S. Das**, S. Mojumder, S. Saha. MHD Mixed Convection Analysis in an Open Channel by Obstructed Poiseuille Flow of Non-Newtonian Power Law Fluid. The 11th International Conference on Mechanical Engineering (ICME), available on *AIP Conference Proceedings*, 2015. DOI: [10.1063/1.4958421](https://doi.org/10.1063/1.4958421)

GRADUATE COURSEWORK

Introduction to Continuum Mechanics, Introduction to Finite Element Method, Mathematical Modeling of Biological Processes, Intermediate Numerical Methods, Musculoskeletal Biomechanics, Structure-Property Relationships of Polymers, Digital Image Processing, Fourier Methods in Digital Signal Processing

SKILLS

- **Simulation & Modeling Tools:** Ansys, Abaqus, LAMMPS, COMSOL Multiphysics, Altair HyperWorks
- **Programming & Scripting Languages:** MATLAB, C
- **Data Visualization & Post-processing Tools:** Tecplot, ParaView, OVITO
- **Mechanical Design Tools:** Solid Works, AutoCAD
- **Documentation & Presentation Applications:** L^AT_EX, Office suite

PRESENTATIONS

- Technical paper presentation in *12th International Conference on Mechanical Engineering (ICME 2017)*, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh (December 2017)

- Technical paper presentation in *7th BSME International Conference on Thermal Engineering (ICTE 2016)*, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh (December 2016)

HONORS & AWARDS

- **Champion** in Mechanical Festival project show, Gesture Controlled Robot 2015
- **Best Cultural Performer of the Year**, Barishal Cadet College (High School) 2012
- **Education Board Scholarship**, Talent-pool Scholarship in High School 2012
- **1st runner-up** in regional level
4th Bangladesh Mathematical Olympiad 2006
- **Champion** in regional level, **1st runner-up** in national level
3rd Bangladesh Mathematical Olympiad 2005

EXTRACURRICULAR ACTIVITIES

- **College Cultural Prefect**, Barishal Cadet College (High School)
Hosted and participated in several cultural competitions, functions, debates and edited college magazines, publications during the year in charge 2011-2012
- **Prizes in Athletics and Games Competitions**
Won several medals and trophies as an athlete at school and college level