

Tanvir Mahmud Saurav

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Education **UNSW Canberra**

Ph.D., Mathematics & Statistics, 2026 (expected).

Fields: Spectral Element Method, Large-Eddy Simulation, Bushfire

The University of Melbourne

M.Phil., Mechanical Engineering, 2021.

Fields: Turbulence, Computational Fluid Dynamics, Heat Transfer

Grade: 91/100, H1 (Outstanding First Class Honours)

Temple University

B.S., Mechanical Engineering, *magna cum laude*, 2018.

GPA: 3.72/4.00

Research **Modelling ember storms at wildland-urban interface**

The aim of this project is to improve the current state of ember modelling to capture near-ground entrainment and re lofting by analysing and adapting existing particle transport models and applying them to model ember storms using large-eddy simulation (LES) in Nek5000, a popular spectral element solver.

Experience **The University of Melbourne**

Postgraduate Research Student

Fluids Research Group, 2018 – 2020.

- Developed roughness models using volume of fluid
- Utilized HPC clusters to perform direct numerical simulation
- Postprocessed and analysed DNS data

Temple University

Undergraduate Research Assistant

Materials Genomics Laboratory, 2015 – 2017.

- Prepared multiferroic samples for data collection
- Maintained VSM and strain measurement systems
- Compiled and analysed magnetostriction data

Temple University

Undergraduate Research Assistant

LISTEN Laboratory, 2016.

- Designed MEMS microphone mounts in SolidWorks for 3D printing
- Simulated acoustic response in COMSOL Acoustics Module
- Constructed LabVIEW programs for data collection and analysis

Teaching	Temple University Undergraduate Teaching Assistant Introduction to Engineering – ENGR 1101, 2016.
Scholarships	University International Postgraduate Award UNSW Canberra, 2022 – Present. Melbourne Research Scholarship The University of Melbourne, 2018 – 2020. Presidential Scholarship Temple University, 2014 – 2018. Honors Merit Scholarship Temple University, 2014 – 2018.
Skills	Nek5000, Gmsh, MATLAB, Python, C/C++, L ^A T _E X, Linux
Publications	T. M. Saurav , “Effect of solidity on momentum and heat transfer of rough-wall turbulent flows”, <i>Masters Research Thesis</i> , (2020), http://hdl.handle.net/11343/267999 T. M. Saurav , M. L. Forst, J. A. Boligitz & H. D. Chopra, “Contracting non-Joulian magnets”, <i>Physical Review B</i> , Vol 95, 174425, (2017), https://doi.org/10.1103/PhysRevB.95.174425