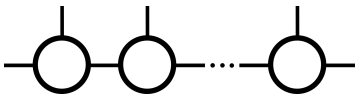
Gabriel H. Brown

gabriel.h.brown@gmail.com // (727)771-3949 // GitHub/GitLab: ghbrown



Education

2020-present	Doctoral Student, Theoretical and Applied Mechanics with Computational Science and Engineering Concentration University of Illinois at Urbana-Champaign; Champaign, IL GPA: 3.72/4.00
2016–2020	BS in Mechanical Engineering University of Notre Dame; Notre Dame, IN GPA: 3.84/4.00

Research Experience

2021, March – present	**Graduate Research Assistant (special interest project) – Tensor Eigenpairs** Edgar Solomonik, Laboratory for Parallel Numerical Algorithms, Computer Science Department University of Illinois at Urbana Champaign
2020, June – present	**Graduate Research Assistant – Tight Binding in Multiscale Modeling of Materials** Harley T. Johnson, Mechanical Science and Engineering Department University of Illinois at Urbana Champaign
2019, May – 2019, August	**Research Intern – Enhancement of Atmospheric Pressure Plasma** Plasma Applications Section, Plasma Physics Division United States Naval Research Laboratory
2017, August – 2020, May	**Undergraduate Research Assistant – Modeling Reaction and Diffusion at Plasma Liquid Interface, Mechanically Actuated Plasma Source, Plasma Catalyst Synergy** Go Lab, Department of Aerospace and Mechanical Engineering University of Notre Dame
2017, May – 2017, August	**Undergraduate Research Assistant – Beam Target Fabrication** Nuclear Science Laboratory, Department of Physics University of Notre Dame

Leadership, Teaching, and Advising

2018 – 2020	Ambassador, Aersopace and Mechanical Engineering Department University of Notre Dame
2018-2020 (yearly)	Presenter and Demonstrator, Science Alive! South Bend

Honors and Awards

Tau Beta Pi Member, Pi Tau Sigma Member, Vincent P. Slatt Research Fellow (ND Energy), Eagle Scout

Skills and Strengths

- scientific computation and simulation, numerical analysis, numerical linear algebra, nonlinear optimization
- Python, Fortran, Chapel (learning), C (some), MATLAB, LAMMPS, LATTE
- Linux, shell, shell scripting, LaTeX
- imaging and spectroscopy, electronic circuits, machining and fabrication

Publications

1. H. E. Delgado, **G. H. Brown**, D. M. Bartels, P. Rumbach, and D. B. Go, "The scaling of kinetic and transport behaviors in the solution-phase chemistry of a plasma–liquid interface," *Journal of Applied Physics*, vol. 9, no. 52, p. 083303, 2021.

2. F. A. Herrera, **G. H. Brown**, P. Barboun, N. Turan, P. Mehta, W. F. Schneider, J. C. Hicks, and D. B. Go, "The impact of transition metal catalysts on macroscopic dielectric barrier discharge (DBD) characteristics in an ammonia synthesis plasma catalysis reactor," *Journal of Physics D: Applied Physics*, vol. 52, no. 22, p. 224002, 2019.

3. D. P. Burdette, M. Brodeur, T. Ahn, J. Allen, D. W. Bardayan, F. D. Becchetti, D. Blankstein, **G. Brown**, B. Frentz, M. R. Hall, S. King, J. J. Kolata, J. Long, K. T. Macon, A. Nelson, P. D. Omalley, C. Seymour, M. Skulski, S. Y. Strauss, and A. A. Valverde, "Resolving the discrepancy in the half-life of ^{20}F," *Physical Review C*, vol. 99, no. 1, Apr. 2019.

4. A. A. Valverde, M. Brodeur, T. Ahn, J. Allen, D. W. Bardayan, F. D. Becchetti, D. Blankstein, **G. Brown**, D. P. Burdette, B. Frentz, G. Gilardy, M. R. Hall, S. King, J. J. Kolata, J. Long, K. T. Macon, A. Nelson, P. D. Omalley, M. Skulski, S. Y. Strauss, and B. V. Kolk, "Precision half-life measurement of ^{11}C: The most precise mirror transition $\mathscr{F}t$ value," *Physical Review C*, vol. 97, no. 3, 2018.

Presentations

1. K. Krongchon, N. Ferdous, **G. H. Brown**, E. Ertekin, H. T. Johnson, L. K. Wagner, "Stacking-dependent binding energy of bilayer graphene from quantum Monte Carlo", DOE Energy Frontier Research Center Principal Investigator Meeting, virtual, 2021. (poster)

2. Nathaniel Shaffer, **Gabriel Brown**, et al., "What's new in the Fortran standard library?", FortranCon 2021, virtual, 2021. (talk)

3. **G.H. Brown**, "Development and Characterization of Plasma Catalytic Reactors", Undergraduate Research and Experiential Learning Showcase, Notre Dame, IN, United States of America, 2018. (poster)

4. **G.H. Brown**, "Development and Characterization of Plasma Catalytic Reactors", Summer Undergraduate Research Symposium, Notre Dame, IN, United States of America, 2018. (poster)

5. **G.H. Brown**, "Macroscopic Electrical Characterization of a Plasma Catalytic Reactor", NDnano Student Presentations, Notre Dame, IN, United States of America, 2018. (talk)