

Victor Venturi, Ph. D.

Postdoctoral Associate in Materials Science and Engineering
Massachusetts Institute of Technology

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EDUCATION

- **Carnegie Mellon University** (August 2017 – August 2022), Pittsburgh, PA
Ph.D. in Mechanical Engineering, GPA: 4.0/4.0
Advisor: Venkat Viswanathan
- **Carnegie Mellon University** (August 2017 – December 2019), Pittsburgh, PA
Master of Science in Mechanical Engineering, GPA: 4.0/4.0
- **California Institute of Technology** (September 2013 – June 2017), Pasadena, CA
Bachelor of Science (B.S.) in Mechanical Engineering, Computer Science (Minor) and Aerospace Engineering (Minor), GPA: 3.5/4.0

EMPLOYMENT

Massachusetts Institute of Technology
Department of Materials Science and Engineering
Postdoctoral Associate, September 2022 – present

FELLOWSHIPS & AWARDS

- 2022 Hibbitt Postdoctoral Research Fellowship at Brown University School of Engineering (declined)
2019 Richard King Mellon Foundation Presidential Fellowship in Energy
2014-16 Summer Undergraduate Research Fellowship (SURF)
2013 São Paulo State Physics Olympiad (OPF): Gold Medal, César Lattes Award (highest score among all students), “O Gabaritador” Award (first in the history of the competition to obtain a perfect score)
2012 Latin-American Astronomy And Astronautics Olympiad (OLAA): Silver Medal
2012 Brazilian Physics Olympiad (OBF): Silver Medal (among 15 student finalists in the selection process for International Physics Olympiad)
2011-12 Brazilian Math Olympiad (OBM): Bronze Medal

SCHOOLS/WORKSHOPS ATTENDED

- 2023 Machine Learning for Materials Informatics (ML-MI),
Massachusetts Institute of Technology (MIT), Cambridge, MA.
2019 Artificial Intelligence for Materials Science (AIMS) Workshop,
National Institute of Standards and Technology (NIST), Gaithersburg, MD.
2017 SUNCAT Summer Institute: Fundamentals and Applications of Heterogeneous Catalysis,
Stanford University, Palo Alto, CA.

PUBLICATIONS

The † symbol indicates equal contribution. [Google Scholar profile](#)

8. C. Fu[†], **V. Venturi**[†], J. Kim[†], Z. Ahmad, A. W. Ells, V. Viswanathan, B. A. Helms. *Universal Chemomechanical Design Rules for Solid-Ion Conductors to Prevent Dendrite Formation in Lithium Metal Batteries*, Nature Materials (2020) DOI: [10.1038/s41563-020-0655-2](https://doi.org/10.1038/s41563-020-0655-2)
7. **V. Venturi**, H. L. Parks, Z. Ahmad, V. Viswanathan *Machine learning enabled discovery of application dependent design principles for two-dimensional materials*, Machine Learning: Science and Technology (2020) DOI: [10.1088/2632-2153/aba002](https://doi.org/10.1088/2632-2153/aba002)
6. Z. Ahmad, **V. Venturi**, H. Hafiz, V. Viswanathan. *Interfaces in Solid Electrolyte Interphase: Implications for Lithium-Ion Batteries*, The Journal of Physical Chemistry C (2021) DOI: [10.1021/acs.jpcc.1c00867](https://doi.org/10.1021/acs.jpcc.1c00867)
5. **V. Venturi**, V. Viswanathan *Modeling of Lithium Intercalation in Twisted Bilayer Graphene*, Journal of The Electrochemical Society (2021) DOI: [10.1149/1945-7111/ac1315](https://doi.org/10.1149/1945-7111/ac1315)

4. Z. Ahmad, **V. Venturi**, S. Sripad, V. Viswanathan, *Chemomechanics: friend or foe of the ‘AND problem’ of solid-state batteries?*, Current Opinion in Solid State & Materials Science (2021) DOI: [10.1016/j.cossms.2022.101002](https://doi.org/10.1016/j.cossms.2022.101002)
3. V. Raj, **V. Venturi**, V. R Kankanallu, B. Kuri, V. Viswanathan, N. P. B. Aetukuri, *Direct correlation between void formation and lithium dendrite growth in solid-state electrolytes with interlayers*, Nature Materials (2022) DOI: [10.1038/s41563-022-01264-8](https://doi.org/10.1038/s41563-022-01264-8)
2. **V. Venturi**, V. Viswanathan. *Thermodynamic Analysis of Initial Steps for Void Formation at Lithium/Solid Electrolyte Interphase Interfaces*, ACS Energy Letters (2022) DOI: [10.1021/acseenergylett.2c00550](https://doi.org/10.1021/acseenergylett.2c00550)
1. W. Guo[†], C. Dun[†], M. A. Marcus[†], **V. Venturi**, Z. Gainsforth, F. Yang, X. Feng, V. Viswanathan, J. Urban, C. Yu, Q. Zhang, J. Guo, J. Qiu. *The Emerging Layered Hydroxide Plates with Record Thickness for Enhanced High-mass-loading Energy Storage*, Advanced Materials (2023) DOI: [10.1002/adma.202211603](https://doi.org/10.1002/adma.202211603)

CONFERENCE PRESENTATIONS

4. **V. Venturi**, V. Viswanathan, 2022 Gordon Research Conference Batteries
3. **V. Venturi**, C. Fu, J. Kim, et al., 2020 Gordon Research Conference Batteries
2. **V. Venturi**, Z. Ahmad, V. Viswanathan, 2019 MRS Fall Meeting
1. **V. Venturi**, V. Viswanathan, Pittsburgh Quantum Institute Science 2018

SERVICE & PROFESSIONAL MEMBERSHIPS

- Student Member of American Physical Society (APS), Materials Research Society (MRS), Pittsburgh Quantum Institute (PQI).

TEACHING EXPERIENCE

- Carnegie Mellon University:
 - 2020 Teaching Assistant for 24-721, Advanced Thermodynamics (one semester)
Responsible for preparing lecture notes, teaching classes, conducting office hours, writing homework and exam questions, and grading exams
 - 2019 Teaching Assistant for 24-321, Thermal Fluids Experimentation and Design (one semester)
Responsible for conducting lab sessions and grading reports and exams
- California Institute of Technology
 - 2016-2017 Teaching Assistant for ME 012abc, Mechanics (three terms)
Responsible for conducting office hours and grading exams and homework assignments
 - 2016 Teaching Assistant for ME 013/113, Mechanical Prototyping (one term)
Responsible for overseeing machine shop sessions and grading projects
 - 2015-2016 Teaching Assistant for ME 011abc, Thermal Science (three terms)
Responsible for conducting office hours and grading exams and homework assignments
 - 2015 Teaching Assistant for EE/ME 007, Introduction to Mechatronics
Responsible for conducting lab sessions and grading reports and final projects

COMPUTATIONAL SKILLS

- Programming languages: Python, C, C++, Wolfram, MATLAB

VOLUNTEER WORK

- 2013- Mentor, Prep Estudiar Fora
Help talented Brazilian students to prepare for the application processes of the best universities abroad.

OTHER

- Languages: Portuguese, English, French, Spanish