



**Anter A. El-Azab**

**Contact Information**

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**Current Position**

- Professor of Materials Science and Engineering, Purdue University

**Education**

- Ph.D., Nuclear Engineering, University of California, Los Angeles, fall 1989- fall1994
- M. Sc, Nuclear Engineering, University of Alexandria, 1987-1989
- B. Sc, Nuclear Engineering, University of Alexandria, 1981-1986 (five-year program)

**Employment History**

- 08/2015 – present Professor of Materials Engineering, Purdue University
- 01/2012 – 07/2015 Professor of Nuclear Engineering, Purdue University
- 06-2012 – present Affiliated Faculty, Computational Science and Engineering Program
- 2010-2011 Professor of Computational Science, Florida State University
- 2010-2011 Professor of Materials Science and Engineering, Florida State University
- 2008-2010 Associate Professor of Computational Science, Florida State University
- 2008-2010 Associate Professor of Materials Science and Engineering, Florida State University
- 2006-2008 Associate Professor, Joint, School of Computational Science & Mechanical Engineering, Florida State University
- 2004-2006 Associate Professor, Mechanical Engineering, Florida State University
- 2003-2004 Senior Research Scientist, Fundamental Science Directorate, Pacific Northwest National Laboratory, Richland, Washington. Responsibilities: Conducted research in materials science, including surface science and nanoscale materials, research program planning and development.
- 2003-2003 Adjunct Faculty, University of Washington, Seattle (via Joint UW/PNNL Institute for Nanoscience). Responsibilities: Curriculum development and teaching in Nanoscience.
- 2003-2003 Adjunct Professor, Mathematics and Sciences Department, Columbia Basin College (CBC), Tri-Cities, Washington. Responsibilities: Teaching discrete mathematics and differential equations.
- 1998-2003 Senior Research Engineer, Energy & Fundamental Science Directorates, Pacific Northwest National Laboratory, Richland, Washington. Responsibilities: Conducted research in materials science and computational science, research program planning and development.
- 1995-1998 Senior Development Engineer and Lecturer, Mechanical and Aerospace Engineering Department, University of California, Los Angeles. Responsibilities: Conducted research in materials science and mechanics, research program planning and development, teaching undergraduate and graduate courses in engineering mathematics and mechanics

**Honors & Activities**

Dr. El-Azab is an academic aiming to advance the human knowledge about materials and their engineering applications in energy, civil, and defense applications through excellence in fundamental research, teaching, and training of students and researchers. He made important research contributions toward the understanding of mechanical, physical, and irradiation behavior of materials; taught and introduced numerous (over 30) courses, and mentored students earning undergraduate and graduate degrees in materials, mechanical, nuclear engineering and computational science. His research aims to accomplish accurate materials predictions through the advancement of materials theory and computational algorithms in close collaboration with experimentalists. His recent and current research includes: metal plasticity across scales, theory of irradiation-driven microstructure evolution and phase stability in materials, microstructure evolution in polycrystalline solids, mechanics, thermodynamics and kinetics of thin film growth, disorder chemistry in oxides, electron and phonon-mediated thermal transport, and computational methods in science and engineering. His research is funded by the US-Department of Energy and National Science Foundation among other agencies.

### **Interests**

Materials theory and computing and connection with experiments, with a focus on defect and microstructure evolution.

### **Ideas for Advocacy for the User Community**

- 1) The synergy with theorists can make the measurements more impactful.
- 2) Thinking beyond current experiments at APS by asking tough experimental questions. For example, can we perform concurrent structural and analytical characterization of materials in 3D and 4D over the same materials volumes.