

**Postdoctoral Fellow Position Available – Materials and Mechanics for Additive
Manufacturing and Metamaterials**

Advanced Manufacturing and Metamaterials Laboratory (<https://www.raynexzheng.com/>) directed by Dr. Xiaoyu “Rayne” Zheng at Virginia Tech seeks highly motivated and exceptional postdoc scholars in the broad area of architected materials, materials for micro/nano additive manufacturing and mechanics of multi-functional materials. Our group draws on principles from mechanics, material science and advanced manufacturing techniques to pursue innovations on 3D hierarchical, multi-material architected metamaterials and explore their extraordinary structural and functional properties for a wide range of applications in structural, flexible electronics and energy conversions. Located at the Corporate Research Center with more than 10,000 sqft lab and facilities space, our group is affiliated with the Department of Mechanical Engineering, Material Science and Engineering and Macromolecules Innovation Institute at Virginia Tech.

Essential Duties

Candidates can apply for one of the two areas:

- Area 1 Materials for Additive Manufacturing: design, modeling and experimental aspects of advanced materials.
- Area 2 Architected materials: Design, analyze and implement structural and dynamic multi-functional materials and devices.
- Publish research results in peer-reviewed scientific or technical journals and present results at external conferences, seminars, and/or technical meetings.
- Collaborate/mentor with other team members to manufacture designed materials with a suite of advanced manufacturing/additive manufacturing techniques.

Qualifications

- PhD in engineering or related field in the design of architected materials. Mechanical engineering, civil, material science and engineering, mechanics, or electrical engineering will be considered.
- Demonstrated comprehensive knowledge and background in fields related to mechanics of architected materials, mechanical metamaterials, or material synthesis for 3D printing and experience with advanced manufacturing.

- Demonstrated ability to develop independent research projects as demonstrated through publication of peer-reviewed literature.
- Demonstrated proficient verbal and written communication skills to collaborate effectively in a team environment and present and explain technical information.
- Demonstrated initiative and interpersonal skills and ability to work in a highly collaborative, multidisciplinary team environment.

Desired Qualifications

- Familiar with ABACUS, COMSOL or other numerical simulation packages.
- Knowledge of materials for additive manufacturing, multi-functional materials

Review of applications will begin immediately. Interested candidates should send your detailed CV, representative publications, and contact information of at least three reference to Prof. Rayne Zheng.

Blacksburg is located in the Blue Ridge Mountains and is widely recognized by national rankings as a vibrant and desirable community with affordable living, world-class outdoor recreation, an active arts community, and a diverse international population. Virginia Tech's Mechanical Engineering (which includes a Nuclear Engineering Program), has 59 faculty, annual research expenditures of over \$18M, and a current enrollment of 340 graduate students with 180 students at doctoral level, and over 1100 undergraduate students. The Department is ranked 14th and 22nd out of all mechanical engineering programs in the nation in undergraduate and graduate education, respectively, by *U.S. News and World Report*. The Department includes several research centers and its faculty members are engaged in diverse multidisciplinary research activities. The mechanical engineering faculty also benefit from a number of university-wide institutes such as the Institute for Critical Technology and Applied Science (ICTAS), the Biocomplexity Institute, Virginia Tech Transportation Institute (VTTI); College level centers such as the recently established Rolls-Royce University Technology Center (UTC) in advanced systems diagnostics, and the Virginia Center for Autonomous Systems (VaCAS); and state level industry-academic research centers such as the Commonwealth Center for Aerospace Propulsion Systems (CCAPS) and the Commonwealth Center for Advanced Manufacturing (CCAM).

Job Type: Full-time