



Materials Science and Engineering

Open Faculty Positions

The [Department of Materials Science and Engineering](#) is engaged in an aggressive, multi-year hiring effort for multiple tenure-track assistant professors whose interests are aligned with the [School of Engineering and Applied Science's strategic plan](#).

Applicants from all materials-related research areas are invited to apply, especially those with expertise in (1) electronic and optical materials for quantum information science and engineering and (2) structural materials for lightweighting, extreme environments, and sustainable manufacturing.

Exceptional applicants for tenured associate and full professor positions may also be considered. We welcome diverse candidates who will reflect the makeup of our society, enrich our intellectual community, and enhance the education, training and mentorship of our students.

Quantum Materials: Discovery and engineering of new materials along with novel device platforms will be the core enablers of any quantum technology. For example, atomically precise materials growth with control over stoichiometry and defects, bonding, crystal structure, and dimensionality will be required to create deterministic sources of entangled quantum states. Great strides made in recent years in materials and devices involve the appreciation of the unique role of the geometry and topology of electronic bands and symmetry breaking fields to create quantum states with unprecedented electronic and optoelectronic responses. These topological materials can enable robust transport of quantum information with no loss of quantum phase and for sensing the information with high fidelity. New material systems and their heterogeneous integration into precisely controlled architectures can lead to novel platforms for quantum

simulation applications. Simultaneously, development of new probes for local and global property measurements is required to accurately characterize new materials and devices and measure the quantum states as they are prepared, manipulated and transported. Foundational research on new and emerging quantum materials, characterization and their integration into novel devices will have a significant impact in ushering in a new era of transformational quantum technologies. We seek candidates with expertise in the areas of materials design and engineering, growth and characterization of their novel structures and properties to create new device paradigms with innovative functionalities for future quantum technologies. Prof. Ritesh Agarwal chairs this search committee.

Structural Materials: The field of structural materials has been invigorated in recent years by new approaches in materials processing, such as the creation of high-entropy/multicomponent alloys, additive manufacturing, and high-strain rate deformation approaches. This has led to new materials for applications in lightweighting, extreme environments, and sustainable manufacturing. Furthermore, computational methods and materials characterization advances have allowed deep insights into the atomic scale origins of the structure/processing/property relationships that control mechanical response. We seek candidates at all ranks whose research focuses on structural materials, broadly emphasizing experimental science and engineering, theory, or both.

Review of applications will begin immediately with a target deadline of December 1, 2022. Candidates are encouraged to apply early in order to be given full consideration.

Qualifications

Must have a Ph.D. in Materials Science and Engineering, or related disciplines.

Application Instructions

Applications must be submitted online via [Interfolio](#). Applications include:

Cover Letter

Curriculum vitae

Research statement (5-page limit)

Teaching statement (2-page limit)

Diversity statement

Contact information for 3 references who could provide letters of recommendation.

The University of Pennsylvania is an affirmative action/equal opportunity employer. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, color, religion, sex, sexual orientation, gender identity, creed, national or ethnic origin, citizenship status, age, disability, veteran status, or any other characteristic protected by law.

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SCHOOL OF ENGINEERING AND APPLIED SCIENCE

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

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