

Position Title: Open Rank Tenure System Positions – Assistant, Associate or (Full) Professor in Semiconductor Science and Engineering - College of Engineering

Position Summary

The College of Engineering at Michigan State University (MSU) invites applications in all areas related to semiconductor science and engineering for up to four open-rank, tenure-system faculty positions. Candidates must have a doctorate in engineering or a closely-related science engineering discipline at the time of appointment, which will be available as of August 16, 2023.

The candidate will be expected to develop a nationally-recognized research program and teach courses within the College at both the undergraduate and graduate levels. All areas of research specialization will be considered, but the following areas have been identified as being of particular interest:

- Heterogeneous microsystem integration of semiconductors and associated radiation effects for space electronics applications. Topics of interest include, but are not limited to, emerging research in microsystems of RF systems-in-packages, mixed analog and digital integration, sensor systems, and space-tolerant power integrated power conversion
- 6G/Millimeter-Wave RF devices and electronics and understanding of the mechanisms of radiation damage on device performance and lifetime for space electronics applications. Topics of interest include, but are not limited to, emerging research in high-frequency device design, IC design, testing (metrology), and model extraction as it relates to advanced circuit applications (e.g., communications and radar) including radiation tolerance and integration techniques for space systems.
- RF devices and circuit design, testing, and radiation tolerant approaches for space electronics applications. Topics of interest include, but are not limited to, emerging research in wide band gap amplifiers, power electronics, and related areas
- Additive manufacturing of dielectric materials for high-performance, radiation-tolerant electronics for space applications. Topics of interest include, but are not limited to, emerging research in additively manufactured dielectric material development, microstructural and interface characterization, deposition/synthesis, thermal/electrical properties and mechanisms underlying fatigue life and damage mechanisms, and the influence of manufacturing processes and microstructure on performance and lifetime in space-based electronics applications
- Development of semiconducting materials for radiation-tolerant electronics for space applications. Topics of interest include, but are not limited to, atomistic prediction and experimental verification of radiation-induced effects, as well as the analysis of non-epitaxial interfaces designed for improving electrical and thermal performance in radiation environments.

Appointments will be made in the Departments of Electrical and Computer Engineering or Chemical Engineering and Materials Science considering existing strengths and capabilities as well as the candidate's preferences. Joint appointments with other engineering departments are possible. This will be a full-time, academic-year appointment in the tenure system, with tenure if appropriate, at a salary commensurate with the candidate's background and experience. Those who conduct research that enhance or are related to aspects of inclusion and equity are of high interest.

About the College

Advancing, disseminating, and applying engineering knowledge has been the focus of the MSU College of Engineering for more than 130 years. The mission of the MSU College of Engineering is to deliver the highest-quality engineering graduates, cutting-edge research, and innovative technology for the benefit

of society locally and globally. The college carries out its mission through educational and research programs over eight departments tackling interdisciplinary themes such as computational sciences, energy, health, manufacturing, materials, mobility, security, and sustainability with research expenditures totaling \$50 million annually.

Research expenditures total \$50 million per year and is highly interdisciplinary, with themes spanning 8 departments including computational sciences, energy, health, manufacturing, materials, mobility, security, and sustainability. Tenure-system faculty within the College are expected to establish a vibrant, sustainable, and internationally visible research program; make significant scholarly contributions to their discipline; be an effective teacher and mentor of both undergraduate and graduate students; and engage in institutional and professional service as well as public outreach. The Departments and College have strong track records of mentoring junior faculty to successfully grow their academic careers.

About MSU

MSU enjoys a park-like campus with some outlying research facilities and natural areas. The campus is in the city of East Lansing, adjacent to the capital city of Lansing. The Lansing metropolitan area has a diverse population of approximately 541,000. Local communities have excellent school systems and place a high value on education. Michigan State University is proactive in exploring opportunities for employment for dual-career couples, both inside and outside the University. Information about MSU's dual-career support can be found at <https://worklife.msu.edu/dual-career>. Information about WorkLife at MSU and the College of Engineering can be found at <https://worklife.msu.edu/> and <https://www.egr.msu.edu/about/resources/faculty-staff/worklife-at-engineering>.

Required Degree

Doctorate - Engineering or a closely-related science discipline

Required Application Materials

Interested individuals should apply for this position through <http://careers.msu.edu> and refer to posting #844681. Applicants must submit the following items: 1) a detailed resume, 2) a cover letter summarizing their qualifications, 3) a vision statement for teaching, 4) a vision statement for research, 5) a vision statement for diversity, equity and inclusion including the individual's awareness/education of DEI; examples of work conducted; the assessment of that work; and outcomes and demonstrated impact of that work and 6) names and contact information for at least three professional references. Items 3, 4, and 5 should be limited to one page each. Candidates are encouraged to describe the potential impacts of their research as well as how their work might complement existing strengths within the College and other programs at MSU.

Review of applications begins on March 1, 2023 and will continue until the positions are filled. Questions about this position are welcome by contacting the search committee chair by email at semiconductorfacultysearch@egr.msu.edu. Data indicates a paucity of underrepresented minorities and women faculty in Electrical and Computer Engineering and Chemical Engineering and Materials Science; individuals in these areas are strongly encouraged to apply.

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, citizenship, disability or protected veteran status.

The university is requiring all MSU students, faculty and staff to be vaccinated against COVID-19 with limited exceptions. Learn more at: <https://msu.edu/together-we-will/>.

Michigan State University has been advancing the common good with uncommon will for more than 160 years. One of the top research universities in the world, MSU pushes the boundaries of discovery and forges enduring partnerships to solve the most pressing global challenges while providing life-changing opportunities to a diverse and inclusive academic community through more than 200 programs of study in 17 degree-granting colleges.