

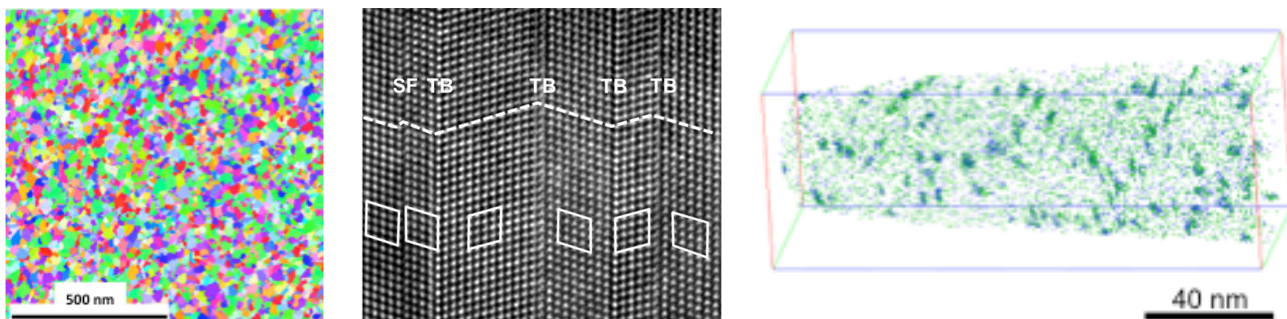
## Open Ph.D. and Post-doc opportunities

### Small-scale mechanics and advanced microstructural characterizations

The Materials Science and Engineering Department at Texas A&M University is a leading materials research institute with focus on metallurgy, microscopy, computational materials science, and small-scale mechanics. The engineering school of Texas A&M is ranked **number 11** in graduate school in the United States nationwide in 2016.<sup>1</sup> In the microstructural characterization and mechanics at small-scales group, we are planning to recruit two Ph.D. students and a postdoctoral research fellow.

The overarching aim of the research projects is to understand mechanics of materials at nano- and sub-micron scales by applying advanced microstructural characterization techniques such as Cs-corrected STEM, TEM-based orientation mapping, EELS, and atom probe tomography. The details of the projects are as follows:

- a) Ph.D. student project 1:** Identify and understand quasi-plasticity in ceramics. The specific aim of the project is to identify energy absorption mechanisms in various ceramic systems upon contact damage.
- b) Ph.D. student project 2:** Employ precession beam in STEM mode to develop new techniques to characterize defects in crystalline materials, which is challenging using conventional image techniques.
- c) Postdoc project:** The postdoc will focus on the microstructural characterization of boron-rich compounds (e.g. boron carbide and boron nitride), and deformation mechanisms investigation of high entropy alloys.



The Ph.D. candidates should have or will obtain their Bachelor Degrees in Materials Science, Physics, or Mechanical Engineering. The Ph.D. candidates also need to pass GRE before can be admitted by the department. Prior experience with SEM, FIB and TEM are highly valued but not essential. The postdoc candidate should have or will obtain his/her Ph.D. degree in Materials Science or a closely relevant field. Strong publication record, fluent speaking and writing English skills, and prior experience in SEM, FIB and TEM are required. The starting dates ranges from January to August 2018. We are an equal-opportunity employer.

We offer an exciting research environment with access to the state-of-the-art nano-mechanics and characterization facilities (including 4 TEMs, one is double corrected TEM equipped with a monochromator, 2 FIBs, etc). The students and postdoc may also have the opportunity to collaborate with world leading experts in metallurgy and microstructural characterizations in Australia (USYD), Germany (MPI), and China (SJTU).

Moreover, we welcome exchange students and scholars sponsored by CSC to join the team and contribute to our vibrant research environment.

Please send your application, consisting of your CV, list of publications, transcript of grades, contact information of three referees, and up to two written samples of your peer reviewed papers (if any) in pdf format to [kelvinxie.jhu@gmail.com](mailto:kelvinxie.jhu@gmail.com). Please note that only complete applications will be considered.

<sup>1</sup><https://www.usnews.com/best-graduate-schools/top-engineering-schools/eng-rankings>