

## **1 Ph.D. position in the field of “Grain Boundary Engineering” at San Diego State University, San Diego, California, USA**

One five-year Ph.D. position with starting date in mid-August 2023 is available in the Multiscale Modeling of Materials (M<sup>3</sup>) laboratory at the Department of Mechanical Engineering (ME) in San Diego State University (SDSU), San Diego, California, USA, under the supervision of Dr. Wenwu Xu (<https://mmm.sdsu.edu/>) and a co-advisor at the University of California, San Diego (UCSD). This position covers tuition fees (\$10,473/year) and provides \$23,376/year of stipend.

We welcome talented, self-motivated candidates with a solid background in materials science and engineering or closely related majors. Experience in one or more of the following techniques, such as Molecular Dynamics (MD) simulations, Density Functional Theory (DFT) calculations, Programming (any languages), and Transmission Electron Microscope (TEM) are highly desired.

The goal of this project is to develop a new strategy to manipulate the grain boundary (GB) structures of polycrystalline metals by using electro-nano-pulsing (ENP) processing – a new technique developed in our laboratory. You will conduct comprehensive testing of the ENP device and use it to engineer GBs of chosen metals, followed by TEM characterization of GB structures. Also, you will perform MD or DFT simulations to provide in-depth understanding of the changes of GB structures under the ENP processing conditions. This project will involve extensive collaborations research groups at both SDSU and UCSD.

For consideration, applicants should possess the following qualifications or attributes:

- B.S. or M.S. degree in a related area and an interest in pursuing a research career.
- Good fundamental understanding of material science and processing.
- Strong interest in both experimental and computer modeling research.
- English: GRE (Quantitative 159; Verbal 153; Analytical Writing: 3.5) AND fulfill either TOEFL 80, IELTS 6.5, or PTE 58 for applicants who did not earn a degree from an English-speaking university.

If you meet the above requirements and are interested in this position, please provide by email ([wenwu.xu@sdsu.edu](mailto:wenwu.xu@sdsu.edu)) a detailed CV, a short personal statement explaining your scientific and research interests (less than one page) and contact information for two referees in support of your application (all in one PDF document). **Review process will start right away until December 15, 2022.** You will be contacted for Zoom/Phone/Skype/In-person discussions if passed the screen process.

For More details about our Ph.D. program please refer to:

<https://www.engineering.sdsu.edu/admissions/jointdocprogram.aspx>