



# Kianoosh Sattari

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ADVISOR/MENTOR: Dr. Lei  
SPONSOR/GRANT: Dr. Lei  
PROGRAM START: Fall 2018

## BIOGRAPHY

Kianoosh has attended Parks College of Engineering since Fall 2018. Through the 2018-2019 school year, he has received a tuition waiver from Parks College and monthly stipend from Dr. Lei, his advisor. Thus, he has been in both teacher and research assistant roles. As a teacher assistant, Kianoosh has been serving Mechanics of Solids lab taught by Professor Ravindra. He is highly interested in assisting undergraduate students in preparing lab reports and doing the experiments. He has been preparing prerequisite processes for the labs and supervise students to gather data with the least amount of error. He explains the basic information to students before the experiments. Knowing in advance a broad picture of an experiment and theory behind it, students can gather precise data and more important are curious about following the experiments. As a research assistant, Kianoosh intends to simulate some ferroelectric materials in three scales: micro-, meso-, and macro-scales.

## RESEARCH

Kianoosh is working on ferroelectric material simulation. He has been modifying a code written in cpp for phase field simulation of ferroelectric materials, which are used in memories, capacitors, actuators, sensors, and electrocaloric cooling devices. Employing a continuum approach in mesoscale, they can simulate these kinds of materials in bulk as well as thin layers scales. His future goal is to combine microscale, utilizing LAMMPS, a fantastic classical molecular dynamic (MD) code, with his recent results from continuum mechanics. Kianoosh is highly interested in coding and programming and trying new adventures. As his secondary research interest, he is working on some molecular dynamic simulations of Graphene and h-BN (hexagonal Boron-Nitride). They intent to see some buckling behaviors of these 2D materials using LAMMPS.



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