

AEROSPACE ENGINEERING
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: April 29, 2024

PROJECT TITLE: Developing High Temperature Sensor Technologies for Nuclear Reactors

Physical Requirement : None

Project's Technical Skills Requirement : LabView, Matlab, SolidWorks, Practical experimental skills

Project's Available Positions : 1

Joseph Corcoran
joseph.corcoran@uc.edu

Project Description

It is necessary to monitor the integrity of nuclear reactors equipment (pipes and pressure vessels) to ensure safety. The challenge is the high temperature (550°C+) environments that they need to be resilient to. A promising candidate sensor technology that we are developing is an electromagnetic acoustic transducer (EMAT). You will be working in a small team comprised of Faculty (myself), a post-doc, and an academic and industrial advisor working on various aspects of the project. Different sensor components will need to be designed, built and tested at high temperature. The project combines academic understanding with practical design and experimentation. By the end of the project we hope to be building an early prototype of the sensor system.

This project is supported by the Department of Energy.
Although all training will be provided, preferred skills/experience include:

- Practical design and experimentation (including CAD)
- Labview/Matlab

For more background on the research group, please see www.ucnde.com