



Fraunhofer

USA

Undergraduate or Graduate Intern

Overview

Fraunhofer USA, Inc. Center Midwest is located on the campus of Michigan State University in East Lansing, Michigan, USA. We are currently seeking highly motivated, reliable and technically competent individuals to join our coatings group to work on the synthesis and characterization of thin films by physical vapor deposition (PVD). Our team conducts applied research on functional coatings for e.g. optical, mechanical, electrochemical, piezoelectric applications. Deposition methods utilized include e.g. magnetron sputtering (MS) with and without ion assist, or cathodic vacuum arc (CVA). The thin films are commonly characterized by spectroscopical (UV-Vis-NIR, laser acoustic wave), microscopical (atomic force, scanning electron), and/or electrochemical methods. As a member of our international team, you will help design and conduct experiments, generate data and present data in a meaningful report. You will conduct internal research as well as industry funded research projects in real time within a state-of-the-art research and development facility.

Current areas of research include

- Development, fabrication and, testing of nitrogen-incorporated tetrahedral amorphous carbon thin films for electrochemical sensing
- Ion beam assisted magnetron sputtering of oxides and nitrides
- Magnetron sputtering of metals, oxides, and nitrides
- Characterization of the above-mentioned thin films by stylus profiler, laser acoustic wave spectroscopy (LAwave®), ultraviolet, visible and near Infrared (UV-Vis-NIR) spectroscopy, atomic force microscopy (AFM), four-point probe (4pp) among others

Responsibilities

- Assist Coatings Technology Group with projects as assigned:
 - Sample preparation for thin film deposition
 - Operation and preparation of physical vapor deposition (PVD) equipment (e.g. magnetron sputtering, cathodic arc evaporation)
 - Operation of analytical equipment
- Suggests and implements ideas for process improvements, the adaptation of new technologies and novel research concepts
- Data collection and reporting in scientific format

Required Qualifications

- Bachelor's or master's degree (or currently pursuing either) in material science, applied physics, applied chemistry or any related field
- Experience working in a laboratory
- Interest in thin films and/or material science
- Willingness to consider a 9 month to 1-year commitment
- Familiarity with Microsoft Office Software

Contact

Please send cover letter and resume to Ms. Nina Baule (nbaule@fraunhofer.org, Technical Lead) and Mr. Michael Becker (mbecker@fraunhofer.org, Administration Director).