

Plasma Polymer Deposition Scientist at General Atomics, San Diego, CA, USA

We currently have an exciting opportunity for an experienced Thin Film Scientist within our Inertial Fusion Technology (IFT) group. This position participates in the development, production, characterization and analysis of novel materials required for laser driven fusion research. The ideal candidate under general supervision with limited review, is responsible for determining and developing effective approaches for resolving a wide range of Plasma Enhanced Chemical Vapor Deposition (PECVD) coating challenges, employing techniques to build complex targets with minimum defects. Assignments are normally outlined in terms of overall objectives, customer specifications, and anticipated delivery dates. Deliveries typically involve the physical targets, comprehensive metrology data packages and shipping documents.

DUTIES AND RESPONSIBILITIES:

- Translate customer specifications into practical fabrication plan with best product quality while minimizing production cost.
- Perform PECVD coatings, including rate check, composition optimization, stress optimization, and contamination control. Deposition of plasma polymer coatings utilizing Glow Discharge Plasma CVD is an integral component of this position.
- Perform characterization of coating defects, composition, films stress, and substrate roughness by using Atomic Force Microscopy, Dark Field Microscopy, Xray fluorescence, and Interferometry.
- Understand and master characterization techniques to support the generation of a comprehensive metrology data package that corresponds with each product.
- Explore new scientific methods and adapt to the production and characterization of targets.
- Pursue research projects under the direction of senior staff and management. Work with and provide support to the wider IFT team and national laboratory collaborators in the above topic areas.
- Work with a high degree of independence in project management while incorporating inputs and constraints from others in a team environment.
- Develop new deposition techniques for advanced multilayer coatings.
- Perform failure analysis, implement and carry out mitigation plans in timely manner.
- Perform equipment maintenance, repair and upgrade. Maintain safe, clean and organized coating laboratories.
- Document findings, communicates results to scientific staff and makes technical presentations as required. Publish in recognized scientific journals, present work at conferences.
- Performs other duties as assigned or required.

We recognize and appreciate the value and contributions of individuals with diverse backgrounds and experiences and welcome all qualified individuals to apply.

Job Qualifications :

- Typically requires a Bachelors degree, Masters degree or PhD in a scientific or related technical field and progressively complex scientific experience as follows; nine or more years experience with a Bachelors degree, seven or more years experience with a Masters degree, and four or more with a PhD. Equivalent scientific experience may be substituted in lieu of education.
- A degree in Physical Science is desirable, in areas such as Chemistry, Physics, Material Science, Chemical Engineering, Nano Engineering. Understand and apply general scientific principles. Be willing to learn and explore new scientific approaches.

- Prior hands-on experience in coating equipment and PECVD/PVD coating processes highly desired. This includes, but is not limited to, plasma polymer deposition and doping, sputtering, e-beam, thermal evaporative coatings, ALD etc.
- Experience with experimental design and analysis, including statistically driven methods and software tools (e.g. DOE, JMP, or similar tools) is highly desired.
- Prior experience working in a cleanroom environment is helpful.
- Software experience can be helpful, such as LabVIEW, SolidWork, AutoCAD.
- The ability to learn and perform target characterization using optical and x-ray based metrology tools. This could include Xray absorption spectroscopy, XRF, Radiography, Scanning electron microscopy with EDAX/EDS, various forms of interferometry and confocal microscopy methods, in addition of conventional optical microscopes, Stylus and AFM tools. Prior experience in this area is desirable, but not required.
- Must possess the ability to; (1) understand new concepts quickly and apply them accurately throughout an evolving environment; (2) strong communication, computer, presentation, and interpersonal skills are required enabling an effective interface with other departments and/or professionals; (3) and, the capability of representing the organization as a prime technical contact; and, (4) and the ability to provide leadership and guidance to less experienced professionals.
- Ability to obtain and maintain a DOE security clearance is highly desired.

Contact:

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Chief Scientist

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