Additive Manufacturing (AM) Research Engineer

We are currently seeking an Additive Manufacturing (AM) Research Engineer with a focus in Cold Spray and a range of experience conducting basic and applied research and process development in the area of AM and cold spray. The ideal candidate is passionate about advancing cold spray and is a 'hands-on' researcher capable of operating cold spray systems and analytical materials characterization equipment and can provide technical leadership through collaboration with an already strong internal team of engineers and to industry through contract research, partnerships, and consortia. Successful candidates will have strategic input into SPEE3D’s Additive Manufacturing (AM) mission and have responsibility in its successful execution. This position offers a unique opportunity to join a world class AM team with a well-established reputation, thought leadership, and an impressive list of AM technologies.

**ESSENTIAL FUNCTIONS:**

- Operate a range of commercially-available and custom additive manufacturing systems as-needed, including analytical materials characterization equipment and industrial robots
- Be able to perform metallography, mechanical testing, and robotic path planning and run controlled experiments to collect accurate and reliable data to advance cold spray technology
- Develop and execute internal research and development (IR&D) topics that align with SPEE3D’s AM mission and advance the team’s technical capabilities
- Write clear, concise, and accurate technical proposals and reports that capture the project requirements and deliverables
- Manage a portfolio of projects as Principal Investigator (PI), execute per the scope and deliverables, and provide technical guidance to the project team to deliver high quality results
- Support lower-level engineers with research, lab work, and developmental activities
- Effectively deliver oral presentations for both internal and external (client and conference) audiences
- Engage with customers during the sales cycle to explore and understand business and technology needs and demonstrate technical competence in pursuit of new project opportunities
- Provide strategic input into the AM technical roadmap based on industry knowledge and feedback

**KNOWLEDGE/SKILLS/ABILITIES:**

- Strong technical knowledge and expertise in cold spray, materials characterization and robotics
- General knowledge of metals and metallurgy involving a wide range of metals and metal alloys
- Familiar or ability to learn robot programming languages: C++ and/or Python
- Excellent customer facing skill set with ability to work with potential clients to develop technical work scopes for incorporation into project proposals
- Aptitude with design tools, computer-aided design, data analysis, and process design
- Familiarity with data acquisition systems, sensor feedback, and controls
- Understanding of materials characterization (i.e. metallography, SEM, mechanical testing etc.) and the ability to develop, execute and obtain results of Design of Experiments (DOEs)
- Exercises initiative and creativity to complete projects within the project scope
- Good interpersonal skills and proven ability to work in a highly team-oriented environment
- Proven ability to function in a fast-paced, project-based, environment
- A demonstrated passion for learning new technologies
- Exhibits proficient written and verbal communication with customers both internal and external
- Willingness to travel periodically (10-20%) to customers and conferences

**PHYSICAL REQUIREMENTS:**

- Laboratory and shop environment, where proper PPE may be required while operating cold spray and support equipment (i.e. hearing, eye and hand protection)
• Office environment and laboratory/light production floor with ventilation, climate-control system, moderate lighting, and moderate noise level.
• Use finger and hand dexterity to type, adjust, move, handle, perform, operate, install, attach, remove, apply, grasp, grip, manipulate, and measure.
• Use vision to see, analyze, and adjust.
• Periodically move, transport, rotate, reach, pull, twist, adjust position, push, stand, stoop, bend and crouch.
• Lift 10 to 40 pounds occasionally

EDUCATION:
• Minimum: B.S. in Material Science Engineering, Mechanical Engineering, or related field
• Graduate degree in relevant area of study is preferable

EXPERIENCE:
• Experience using powder-based additive manufacturing equipment
• Experience with carbon steel, stainless steel, aluminum, and nickel-based material systems
• Experience with the development of technical work scopes and incorporation into detailed and professional project proposals
• Experience in a fast-paced R&D project-based or hands-on manufacturing environment is preferred

CONTACT:
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