Research Scientist/Engineer at Staff, Senior, and Principal Levels
Illinois Applied Research Institute
The Grainger College of Engineering
University of Illinois at Urbana-Champaign

The Illinois Applied Research Institute (ARI) at the University of Illinois at Urbana-Champaign is seeking applicants for Research Scientist/Engineer positions in Formulation Chemistry at three different levels of experience. The levels are Staff Research Scientist/Engineer, Senior Research Scientist/Engineer, and Principal Research Scientist/Engineer. The distinction between the "Scientist" and "Engineer" titles is one of background field, experience, and expertise - successful candidates will be able to specify which title is preferable for their fields. All professionals hired into these positions will be involved in a variety of research and development (R&D) activities in areas of applied science, engineering, mathematics, and/or computer science/technology.

ARI's mission is to ***translate innovation to practice*** as part of the thriving technology ecosystem at the University of Illinois. Its professional research staff provides translational, multidisciplinary solutions for real-world problems in defense and security, manufacturing and materials, and building science. ARI staff perform research and development leveraging their broad government- and industry-based expertise in algorithm and software development, materials development and characterization, and monitoring, diagnostics, and controls with sensors and data fusion, and workforce training. ARI possesses unique capabilities for open, proprietary, and classified projects and works with collaborators across government, industry, and academia. More information about ARI can be found at appliedresearch.illinois.edu.

For the current positions, ARI is interested in hiring individuals with expertise in **formulation chemistry**, including, but not limited to:

- polymers and polymer-based nanocomposites
- paints and coatings
- polymers, nanocomposites, inks and/or hydrogels for additive manufacturing

Champaign-Urbana is not only the home of a world-class university - it is also a community that supports a comfortable, family-friendly lifestyle, including:

- very affordable and spacious homes with numerous new building options
- a maximum 20-minute commute time within Champaign-Urbana
- plentiful, high quality, and reasonable childcare options
- a strong public school system with a gifted program, as well as several private options at all levels
- a wide variety of recreational sports and performing arts engagement opportunities
- an active regional airport with jet service to hubs in Chicago, Dallas, and Charlotte

For more information, see the following sites that profile our community:

- Champaign County Visitors Bureau: www.visitchampaigncounty.org
- Champaign County Association of Realtors: www.champaigncountyassociationofrealtors.com

- Champaign County Arts Council (40 North 88 West): 40north.org

The University of Illinois is an Equal Opportunity, Affirmative Action employer that recruits and hires qualified candidates without regard to race, color, religion, sex, sexual orientation, gender identity, age, national origin, disability or veteran status. For more information, visit go.illinois.edu/EEO.

Specific duties and responsibilities for each position level include the following:

STAFF RESEARCH SCIENTIST or ENGINEER - This is an entry-level/early career research and development position that will leverage an individual's desire to apply their current knowledge in chemistry, polymers and/or chemical engineering, to learn and expand their expertise, and to build their capabilities in polymers and formulation chemistry to deliver real-world solutions through applied research. Numerous established pathways for professional growth and promotion include increased responsibilities for project milestone deliverables, project approach formulation, proposal preparation, and technical or project leadership and mentorship.

Job Duties & Responsibilities:

- Perform laboratory tasks to prepare and process polymer formulations.
- Independently perform characterization and testing on polymer systems including solutions, gels, coatings, bulk polymers and polymer-based composites.
- Maintain detailed and accurate record-keeping of all experimental details and results in a way that is consistent with ARI, UIUC and sponsor policies.
- Assist in the coordination of the research activities of post-doctoral research associates or students.
- Collaborate with other ARI research staff in the preparation of materials for proposals to funding sources including public and/or private entities as necessary.
- Assist in managing research activities against timelines, budgets and deliverables.
- When appropriate and encouraged by sponsors, present research results through publication of scientific papers, conference presentations and technology demonstrations.
- Perform other duties as assigned.

Minimum Qualifications:

- Bachelor's degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- Experience in preparing, testing and characterizing polymer materials.
- Demonstrated ability to work in a team environment.

Preferred Qualifications:

- Doctoral degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- Bachelor's or Master's degree plus 2-5 years' formulation experience in paints, coatings, 3D printed inks or other polymer based products.

- Basic understanding of the effects of some additives on the resultant rheological, mechanical, optical, and/or chemical properties for aqueous and/or organic formulations.
- Experience with 3D printing including CAD design.
- Detailed understanding of some polymer characterization and testing methods including mechanical, rheological, structural, chemical and/or life cycle testing.
- Experience with materials informatics.

SENIOR RESEARCH SCIENTIST or ENGINEER - This mid-level position requires the ability to contribute to the formulation and execution of high-impact applied research in polymer science through the application of formulation chemistry in response to customer needs and the willingness and/or demonstrated ability to work collaboratively in a diverse team to attract and successfully execute external R&D contracts. The professional development pathway for this position includes increasing levels of responsibility and leadership in the origination of new research programs and leadership/management of highly collaborative and productive teams.

Job Duties & Responsibilities:

- Conduct high-quality applied research and lead tasks within externally- and internally funded projects. This includes collaboration and partnership with other ARI research staff as well as professionals across campus and external entities including government agencies, industry, and foundations, to deliver interdisciplinary solutions for customers.
- Assist with the oversight of research contract finances/spending, project management/milestones, reporting, and related personnel management.
- Work collaboratively and/or independently to develop, manage and submit proposals to funding sources including public and/or private entities.
- Provide technical and professional mentorship to other ARI research personnel.
- When appropriate, travel for visits to sponsors, industry days, and contractually mandated reporting meetings.
- When appropriate and encouraged by sponsors, present research results through publication of scientific papers, conference presentations and technology demonstrations.
- Perform other duties as assigned.

Minimum Qualifications:

- Bachelor's degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- 5 years' formulation experience in paints, coatings, 3D printed inks or other polymer based products.
- Strong fundamental understanding of the effects of some additives on the resultant rheological, mechanical, optical, and/or chemical properties for aqueous and/or organic formulations.
- Detailed understanding of several polymer characterization and testing methods including mechanical, rheological, structural, chemical and/or life cycle testing.
- Experience with proposal preparation, as a co-author or author, resulting in externally-funded R&D support and successful program execution.
- Demonstrated ability to work in a team environment.

Preferred Qualifications:

- Doctoral degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- Bachelor's or Master's degree plus 7-10 years' formulation experience in paints, coatings, 3D printed inks or other polymer based products.
- Experience leading and managing research groups and professionals.
- Publications in internal and external venues and related patents.
- Experience with materials informatics.

PRINCIPAL RESEARCH SCIENTIST or ENGINEER - This senior-level position requires the ability to formulate and execute high-impact applied research polymer science through the application of formulation chemistry in response to customer needs and to attract substantial external funding and lead and work collaboratively with a diverse staff and customer base. The professional development pathway for this position includes increasing levels of technical and administrative responsibility, supporting the formation of new strategic directions for polymer science activities within ARI at an executive leadership level.

Job Duties & Responsibilities:

- Apply expertise and experience in formulation chemistry of polymer systems to develop unique technical solutions and translate these into successfully funded research programs through proposals and other research business development activities.
- Develop, manage, and lead teams of technical research professionals as primary investigator (PI) to pursue, attract, and maintain a vibrant externally funded applied research and development enterprise. This includes collaboration, partnership, and leadership (when appropriate) with ARI research staff as well as professionals across campus and external entities including government agencies, industry, and foundations, to deliver interdisciplinary solutions for customers.
- Maintain oversight and responsibility for research contract finances/spending, project management/milestones, reporting, and related personnel management.
- Facilitate and maintain professional relationships with potential and current sponsors and program managers, including travel for visits, industry days, and contractually mandated reporting meetings.
- Provide technical and professional mentorship to other ARI research personnel.
- When appropriate and encouraged by sponsors, present research results through publication of scientific papers, conference presentations, and technology demonstrations.
- Perform other duties as assigned.

Minimum Qualifications:

- Master's degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- 10 years' formulation experience in paints, coatings, 3D printed inks or other polymer based products.

- Demonstrated expertise in the understanding of the effects of some additives the resultant rheological, mechanical, optical, and/or chemical properties for aqueous and/or organic formulations.
- Expertise in relevant processing, characterization and testing methods.
- Track record of success in developing, writing and managing proposals and securing external funding from the Department of Defense, Department of Energy and/or Industry.
- Track record of successful project execution.
- Experience leading and managing research groups and professionals.
- Demonstrated ability to work in a team environment.

Preferred Qualifications:

- Doctoral degree in chemistry, chemical engineering, materials science, polymer science or a related field.
- Master's degree plus 12-15 years' formulation experience in paints, coatings, 3D printed inks or other polymer based products
- Publications in internal and external venues and related patents.
- Experience with materials informatics.

These positions are full-time, benefits-eligible academic professional positions appointed on a 12-month service basis (See www.hr.uillinois.edu/benefits for details.) The expected start date is as soon as possible, based on the business needs of the organization. Salary and position level are commensurate with experience and qualifications.

To apply for this position, please create your candidate profile at **jobs.illinois.edu** and upload your cover letter, CV/resume, and names/contact information for three references as a single PDF file by **September 28, 2020**. For further information regarding application procedures, contact Summer Redman at sredman@illinois.edu or 217-300-5400.

The University of Illinois conducts criminal background checks on all job candidates upon acceptance of a contingent offer. As a qualifying federal contractor, the University of Illinois System uses E-Verify to verify employment eligibility. The University of Illinois must also comply with applicable federal export control laws and regulations and, as such, reserves the right to employ restricted party screening procedures for applicants.