

2019 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS
August 12, 2019

For full schedule, including Center events, please see the Department Calendar:
<http://www.chemistry.northwestern.edu/events/calendar.html>

Arrivals

Dahee Jung joined the Farha Group

BIP

BIP is on summer vacation and will resume in the fall.

Opportunities

Pacific Northwest National Laboratory (PNNL) is a world-class research institution powered by a highly educated, diverse workforce committed to collaboration and work–life balance. Every year, scores of dynamic, driven postdocs come to PNNL to work with renowned researchers on meaningful science, innovations and outcomes for the U.S. Department of Energy and other sponsors; here is your chance to be one of them!

Contribute to PNNL's goals in catalysis as part of the Lab's Physical Sciences Division (PSD). As an experimental postdoctoral researcher in the Catalysis Science group, you will join a multi-investigator team focused on the design of molecular catalysts for the hydrogenation of CO₂, carboxylic acids, and related species, with an emphasis on the impact of solvent on catalysis. You will be mentored by prominent researchers, including Aaron Appel, Eric Wiedner, and John Linehan, as you develop your experimental research, seeking to understand design concepts for molecular catalysts, often in close collaboration with heterogeneous catalysis colleagues.

The Ideal Candidate

If you are interested in becoming a postdoctoral researcher in catalysis at a national laboratory widely recognized for its work in catalysis, we want to connect with you. Details are below; you do not need to meet all of the preferred qualifications to be considered.

What you will do:

- Conduct independent research and work on team assignments
- Lead manuscript development and maintain a strong overall publication record in the peer-reviewed scientific literature
- Interact, communicate, and solve problems with a diverse team of co-workers in the Catalysis Science group, PSD and across PNNL
- Present research at technical conferences and project review meetings

PNNL is committed to diversity and inclusion; applications from women, minorities, individuals with disabilities, and veterans are strongly encouraged.

Email PNNL Recruiter Fred Bond at Fred.Bond@pnnl.gov for details, or share this opportunity with someone you know today.

Minimum Qualifications: Candidates must have received a PhD within the past five years (60 months) or within the next 8 months from an accredited college or university.

Preferred Qualifications

Minimum Qualifications:

- Ph.D. in Chemistry

- Experience in experimental catalysis research

Preferred Qualifications:

- Strong verbal and written communications skills
- Experience with synthesis, characterization, and mechanistic chemistry
- Synthesis and manipulation of air-sensitive materials (drybox and Schlenk techniques)
- Proficiency with a range of spectroscopic techniques, particularly NMR spectroscopy
- Functional knowledge of thermodynamic and kinetic concepts

https://careers.pnnl.gov/psc/hrmsx/EMPLOYEE/HRMS/c/HRS_HRAM_FL.HRS_CG_SEARCH_FL.GBL?Page=HRS_APP_JBPST&PostingSeq=1&SiteId=1&FOCUS=Applicant&jobopeningid=309626&

Colorado School of Mines: Post-doctoral researcher sought for full-time position at the Colorado School of Mines, in collaboration with our research sponsor. The project would focus on molten salt and materials chemistry of uranium, zirconium and lithium. Electrochemistry, materials science, molten salt and/or glovebox experience preferred. Ph.D. Required. Our group has a demonstrated history of exciting research in areas of nuclear security, materials management and fundamental f-element science. Publications can be found here: <https://www.shafer-radiochemistry.com/publications/> and more information on the group can be found here: <https://www.shafer-radiochemistry.com/>

Responsibilities include: designing experiments and process flow; examination of solution effects in plating chemistry using electrochemical and spectroscopic methods electroplating; material characterization through SEM and other forms of microscopy, preparing biweekly progress update presentations and quarterly updates to research sponsor; collaborating effectively with sponsor partners through sample exchange, co-development of processes, and materials characterization; providing mentorship to a graduate student and undergraduate student on the project; maintaining excellent lab safety and a diverse, accepting work environment; and assisting our Assistant Research Professor with research group management (total of 10 graduate students, 1 undergraduate student, 1 technician).

How to Apply: Applications should email Professor Shafer (jshafer@mines.edu) with a CV, references and cover letter describing relevant skills and availability date (required). Desired start date is October 1, 2019, but flexibility exists regarding this. References will not be contacted until later in the selection process and you will be informed before that contact is made.

Total Rewards: Starting salary will be determined by the qualifications of the selected applicant balanced with project budget availability and available market information. Mines provides an attractive benefits package including fully paid health and dental insurance. Part of Mines' mission is to create a family-friendly environment supported through our dependent tuition benefits, parental leave benefits, and dependent care assistance plan, as well as in special events, camps, and programming. For more information visit: family.mines.edu

About us: The Colorado School of Mines is located in picturesque Golden, in the foothills of the Rockies, 15 miles west of Denver and 20 miles south of Boulder. The Shafer Research Group focuses on both the fundamental and applied aspects of actinide science and related technologies. Dr. Shafer's group is a high-quality, well-funded research program (\$750,000 in annual research awards) with support from DTRA, DOE-NNSA, DOE-SC, DHS, and NSF. The research group is highly interdisciplinary and matriculates' students with both Applied Chemistry and Nuclear Engineering graduate degrees.

City University of New York, Research Associate – Photonics Initiative in New York, New York

GENERAL DUTIES

Conducts academic research in connection with CUNY programs; may assist faculty, staff, and students in conducting research and lead research efforts involving others.

- Develops research plans and proposals and participates in acquiring funding
- Collects, analyzes, and assures validity of data
- Writes progress reports; writes and publishes findings
- Collaborates with internal and external colleagues
- Adheres to standards for safety and hygiene and ethical conduct as defined by the University and relevant outside parties

A Research Associate (Post-doctoral Fellow) position is currently available under the supervision of Professor Matthew Sfeir at the ASRC's Photonics Initiative. Our group explores novel electronic phenomena in nanoscale and molecular materials with ultrafast and other broadband optoelectronic probes. The research project will include the design and fabrication of photonic structures incorporating organic spin materials, as well as a determination of their magnetic, nonlinear optical, and transient properties.

It is expected that the incumbent will independently pursue new research ideas, publish outstanding papers and publicize his/her work at conferences, mentor graduate students, and participate in fundraising efforts.

The lab is part of a dynamic and multidisciplinary research environment at the Photonics Initiative of ASRC, in which multiple groups share mixed labs, structures and facilities. Along this line, we truly value and promote the genuine exchange of ideas and expertise. The CUNY Advanced Science Research Center provides sophisticated equipment and staff support to researchers, including a state-of-the-art Clean Room/NanoFabrication Facility, Imaging facilities, Visualization Room, and a Rooftop Observatory. For more information about Professor Sfeir's lab, visit <https://sfeirlab.ws.gc.cuny.edu>. This position is for one year and is renewable for a second and third year, with an end date no later than August 2022.

Duties include but are not limited to:

- Develops ideas and experimental concepts in the field of nanophotonics and organic electron spin materials.
- Develops and fabricates new experimental ultrafast optical techniques for the characterization of nanoscale and molecular photonic structures.
- Runs experiments and simulations, performs data analysis, and writes scientific reports for publications and grant proposals.
- Assists and mentors students in conducting research.
- Conducts independent research within the guidelines of the group and in collaboration with other members of the lab, the Photonics Initiative and ASRC.
- Adheres to standards for safety and hygiene and ethical conduct as defined by the University and relevant outside parties.
- Performs other duties as assigned.

MINIMUM QUALIFICATIONS

Doctoral Degree in a related field and demonstrated research ability.

OTHER QUALIFICATIONS

A preferred candidate should have:

- Ph.D. degree in Physics, Chemistry, Photonics, or Engineering.
- 2 years of research experience in the field of ultrafast optics and/or integrated photonics and/or nanomaterials and/or electron spin phenomena.

- Experience with electron spin resonance, nanophotonics, electronics, and new technique development.

<https://cuny.jobs/new-york-ny/research-associate-photonics-initiative/A534F29BDDD84CB989D23F287EAC0127/job/>

Informal inquiries can be sent to msfeir@gc.cuny.edu.

CLOSING DATE

Open until filled with review of applications to begin on July 22, 2019

University of Calgary, Postdoctoral Positions: In 2016, the University of Calgary was awarded \$75 million, over seven years, from the [Canada First Research Excellence Fund \(CFREF\)](#) for its initiative entitled: “[Global Research Initiative in Sustainable Low Carbon Unconventional Resources](#)”. The goal of this research is to dramatically reduce the impact of energy extraction and energy use on the environment.

As part of the implementation of its CFREF scientific strategy and to address the Grand Challenge aiming to develop next generation of CO₂ conversion catalysis, a project in the production climate neutral synthetic fuels through electrocatalytic carbon dioxide reduction is seeking up to three team members at the Postdoctoral level to join the project.

The successful candidates will work within a multidisciplinary team of synthetic chemists, electrochemists, surface scientists and engineers consisting of 5-7 PI's, 5 PDFs and a similar number of graduate students. The primary aim will be to develop new, selective CO₂ conversion catalysts supported on novel conducting materials. While initially CO has been targeted as a product, other potential fuels will also be within scope.

Accordingly, we seek applications from qualified candidates within 2-4 years of their Ph.D. degree to fill Postdoctoral Fellow positions with the following specific qualifications:

1. **Synthetic inorganic chemistry (2):** Ph.D. in inorganic chemistry with an emphasis on the synthesis and characterization of organometallic and coordination compounds, particularly of the first row transition series. The ability to prepare and manipulate air and moisture sensitive compounds, and characterize them using a suite of modern spectroscopic and analytical techniques. Working knowledge of electrochemistry and electrocatalysis is also strongly desired.
2. **Electrochemistry and catalysis:** Ph. D. in electrochemistry with an emphasis on electrocatalysis, including homogeneous and surface electrochemistry on novel electrode materials. Experience in the evaluation and benchmarking of new CO₂ reduction catalysts, liquid/gas phase product analysis, surface and materials characterization techniques, and mechanistic analysis would be assets.

The appointments will be for 2 years with a \$55,000/year salary (CND dollars); the positions also come with sufficient research support to be managed by the candidate in consultation with the PI members of the team. In addition, the candidates will be required to work within a team environment and so excellent communication skills and the ability to work effectively with a diverse group of interdisciplinary researchers is a must. As PDF team members, strong leadership in project management is also expected.

In assembling the CFREF research teams, aggressive diversity and equity targets are in place and so applications from under-represented groups are especially encouraged

Applications should be sent directly to Prof. Warren Piers, wpiers@ucalgary.ca, and should consist of a current CV, a list of 2-3 referees with contact information and a cover letter indicating your are applying for a position with the *Synthetic Fuels* team as a synthetic inorganic chemist or an electrochemist. Please

also indicate your availability. The search will continue until the position is filled, preferably by January 1, 2020.

To be eligible as a Postdoctoral scholar at the University of Calgary, the candidate must have been awarded a PhD or equivalent within the five (5) years immediately preceding the appointment. Please review the [Eligibility](#) page for more information prior to applying for this position.

MilliporeSigma, Milwaukee, Wisconsin Global Product Manager - Energy Materials

Materials Science is a rapidly growing product area within MilliporeSigma's Lab and Specialty Chemicals business. The product management team operates as the hub to coordinate product development, innovation, marketing, and commercial efforts. Our products include monomers, polymers, nanomaterials, electronic chemicals, thin-film materials, and the advanced chemicals used to make them.

Your Role: Manage the Energy Materials product line and drive its growth through collaboration with internal partners in R&D and Business Development and external partners in academics and industry to identify, develop, and commercialize innovative technology and products for energy and inorganic nanomaterials research.

The Energy Materials product line includes materials used for energy storage and energy harvesting and but also inorganic nanomaterials for bioassay development, diagnostics and imaging applications. In this role, you will manage the product portfolio, develop marketing campaigns, set competitive pricing strategy, and expand the product portfolio.

Who you are:

The successful candidate will have a strong background in materials science, energy and/or inorganic nanomaterials research coupled with scientific curiosity and keen interest in market analysis and product marketing. Further, the ability to recognize and cultivate technology areas that address unmet customer needs in energy and nanomaterials research- and to develop meaningful revenue-are crucial for this role.

Minimum Qualifications:

- Ph.D in in Chemistry, Materials Science, or Engineering and 1+ years of experience.
- Or a B.S. in Chemistry or Materials Science with 5+ (five) years of product management and business development experience directly related to the energy and nanomaterials product line(s).
- Fluency in English is required; other languages are a distinct advantage
- Ability to travel domestically (approx. 25% of time) and internationally (approx. 5% of time).

Preferred Qualifications:

- Post-doctoral experience is ideal, but recent graduates with exemplary record will be considered. MBA is preferred but not required.
- Ability to work with a variety of teams, including product management, marketing teams and operational professionals
- Technical understanding of the principles and techniques used in nanomaterials and energy storage materials research
- Excellent communication skills, both written and verbal.
- Ability to communicate with customers, present technical proposals, training or reports, to all organizational levels inside and outside MilliporeSigma.

https://jobs.vibrantm.com/emd/job/Milwaukee-Global-Product-Manager-Energy-Materials-WI-53209-3645/526120401/?locale=en_US

Postdoc position available at Dartmouth College with David Glueck 1-year position, may be renewed for another half year Start date January 2020 (some flexibility possible)
ACS-PRF funded “Metal-Catalyzed Enantioselective Hydration of Nitriles”
Requires experience in inert-atmosphere synthesis/characterization techniques
Also valuable: expertise in catalysis, NMR, phosphine chemistry

Please send (to glueck@dartmouth.edu) cover letter, CV, and 3 letters of recommendation, and contact me with any questions
David Glueck, 6128 Burke Laboratory, Department of Chemistry, Dartmouth College,
Hanover, NH 03755 USA
glueck@dartmouth.edu
dartmouth.edu/~glueck

Kester, An Illinois Tool Works Company, Itasca, Illinois - The Product Development Chemist will conduct materials research and experiments to develop electronic interconnection assembly materials. The successful candidate will develop new soldering materials at the lab level and will also lead the effort to ready new products for mass production through a manufacturing scale-up process.

Primary Duties and Responsibilities

- Develop new and improve current solder paste, liquid flux, tacky flux and cored wire products
- Interface with customers and sales team regarding VOC and evaluations of new products
- Determine new product performance specifications
- Contact suppliers to obtain new raw materials and technical information for evaluation
- Develop new test methods to differentiate new products from previous products and/or competitive products
- Manage new product design process
- Work with scale-up process engineers to bring new materials into mass-production
- Assist Product Management team with data collection for brochures, supplemental data packages, and other
- marketing materials
- Work on specific customer issues and solve internal manufacturing problems
- Perform routine maintenance of equipment and work area
- Support other departments as needed (QC, Engineering, Manufacturing, Sales & Marketing)
- Train less experienced staff in the department
- Occasional travel may be required
- Additional duties and tasks as assigned

Leadership Expectations – ITW

- Strategically Positions Business to Win in Markets. ITW leaders understand what is required to win. They are strategic and anticipate future trends. They bring an outside-in perspective to drive innovation in the organization. They demonstrate a strong enterprise mindset and do what is right for ITW.
- Delivers Results. ITW leaders execute and deliver. They exhibit exceptional business acumen and excellent project management skills. They are stewards of the ITW Toolbox. They hold themselves accountable for consistently meeting ITW’s earnings targets.

Qualifications: To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Minimum of a bachelor’s degree in Chemistry. A related technical graduate degree is highly desired

- Minimum of five (5) years professional chemistry experience with chemical/materials synthesis and test experiences.
- Have good knowledge of the soldering materials, electronics assembly process, electronic industrial standards & test methods, DOE design, statistical analysis, DFM and dFMEA methodologies, and proven application of this knowledge through professional experience.
- Strong project management skills to consistently meet deadlines
- Proven problem-solving skills, open minded for new knowledge and work methodology
- Strong verbal and written communication with excellent presentation skills; ability to effectively interact with customers and employees within all levels of the organization
- Ability to handle multiple tasks and work in a fast-paced environment
- Proficient computer skills - MS Office (PowerPoint, Excel, Word, Outlook, etc.); JMP and/or Minitab is a plus
- Must be a team player with excellent interpersonal and relationship building skills
- Takes initiative; able to function independently and make independent decisions
- Applicants must be authorized to work in the U.S. as a precondition of employment
- Sponsorship is not available for this position
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Travel Requirements

Must be willing to travel domestically and internationally as necessary to fulfill the job responsibilities. Travel estimate for this position is estimated to be up to 10%.

Contact: Shawn (Xiang) Wei xwei@kester.com <<mailto:xwei@kester.com>>
www.kester.com

The Department of Chemistry and Biochemistry at Washington and Lee University seeks to fill a full-time Visiting Assistant Professor position to teach Organic Chemistry and the associated lab. The position is for one year. The position starts in August 2019 and requires a Ph.D. in Chemistry (or ABD Ph.D.); teaching experience is highly desirable. The successful candidate will be responsible for teaching a 6.0 course load, which includes: teaching a two-semester organic chemistry sequence and the accompanying labs. There is the possibility of having some resources to engage students with undergraduate research. In keeping with the goals of the W&L Strategic Plan, we seek candidates who can effectively mentor underrepresented minority students.

Diversity is a core value of the Department of Chemistry & Biochemistry. We believe that the educational environment is enhanced when people with diverse backgrounds and ideas come together to learn. Women and underrepresented groups are encouraged to apply.

Washington and Lee University is a highly selective, independent, co-educational, liberal arts college of approximately 1850 undergraduate students located in Lexington, VA, three hours southwest of Washington, DC. W&L is consistently ranked among the top 12 national liberal arts colleges. The Department has ACS-certified programs in both chemistry and biochemistry.

Qualifications

Ph.D. in Chemistry (or ABD Ph.D.); teaching experience is highly desirable. Ability to teach a two-semester organic chemistry sequence and the accompanying labs.

Application Instructions

Applicants should submit the following materials: a cover letter, a curriculum vitae, graduate and undergraduate transcripts, a two-page statement of teaching philosophy, and the contact information for the writers of three letters of recommendation. Letter writers will contribute their materials directly to Interfolio. To submit applications online, visit: <http://apply.interfolio.com/65350>. Review of applications will begin immediately and continue until the position is filled. If you have questions about the position, please contact Dr. Erich Uffelman, Department Head, Department of Chemistry and Biochemistry, uffelmane@wlu.edu.