

**2017 WEEKLY BULLETIN**  
**DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY**  
**EVANSTON, ILLINOIS**

July 31, 2017

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

**BIP**

BIP meets every Friday 10-11:00am in Tech K140

**Arrivals**

We did not have any new arrivals

**Opportunities**

**Postdoctoral Position in Synthetic Inorganic Chemistry Los Alamos National Laboratory (LANL):**  
Seeking an outstanding candidate with extensive inorganic, organic or organometallic chemistry experience to support emerging/growing programs focused on the fields of actinide chemistry and nuclear security. Candidate will be performing synthetic chemistry to prepare, isolate and characterize novel compounds including those of the actinides, or of transition metals. Study and optimization of metal catalyzed decomposition of organic compounds to generate gas pressure at low temperatures may also be pursued. Candidate must be willing and able to work with an interdisciplinary team of scientists from multiple organizations including Chemistry, Materials Science, Engineering, Theoretical and Weapons Divisions.

**Minimum Job Requirements:**

A strong background and extensive hands-on experience in synthetic chemistry. The ability to work in an independent and creative fashion. Demonstrated excellence in written and oral communication skills as evidenced by a strong publication and presentation record.

**Desired Skills:**

Experience with standard wet- and air-sensitive chemistry techniques for molecular synthesis and characterization (chromatography, Schlenk, drybox, chromatography, NMR and optical spectroscopy, etc.) Knowledge of ligand design. Additional experience in structural analysis (XRD) is a plus.

- Demonstrated ability to work independently and with minimum supervision
- Demonstrated ability to plan and organize assignments so that schedules are met on time
- Ability to obtain a DOE "Q" clearance for one of the programs.

**Education:**

Ph.D. in chemistry within the last five years or soon to be completed is required

***Where You Will Work***

Located in northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security. LANL enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health, and global security concerns. Both positions are in the Chemistry Division

**Notes to Applicants:**

If interested, please send a CV with the names of three references to Jim Boncella at [Boncella@lanl.gov](mailto:Boncella@lanl.gov)  
For additional technical details, contact Dr. Jim Boncella at [Boncella@lanl.gov](mailto:Boncella@lanl.gov) For general information on the LANL Postdoc Program go to <http://www.lanl.gov/careers/careeroptions/postdoctoralresearch/index.php>.

**The Department of Chemistry and Biochemistry at Eastern Illinois University** has an opening for a temporary (1 year, full time) teaching position for the 2017-18 school year, with preference given to applicants who are able to teach Analytical Chemistry. The likely teaching assignment includes a mixture of Instrumental Analysis and/or Quantitative Analysis, General Chemistry and General Education lecture and lab classes. To apply, email a pdf of your resume, a brief statement of your interest and qualifications for the position, and the names and contact information for three references to [rpeebles@eiu.edu](mailto:rpeebles@eiu.edu). Review of applications will begin as soon as possible, and preference will be given to applications received by Wednesday, July 26. Please contact Rebecca Peebles (department chair) at [rpeebles@eiu.edu](mailto:rpeebles@eiu.edu) or (217)581-3322 with questions or for additional information.

EIU is a primarily undergraduate institution with BS, BA, and MS programs in Chemistry and about 10-15 students receiving bachelors degrees each year. There is a heavy emphasis on undergraduate research participation within the department. Our departmental web site is here: <http://www.eiu.edu/eiuchem>. We are located in Charleston, IL, about 1 hour south of Champaign-Urbana and halfway between Indianapolis and St. Louis.

**The University of Chicago, Center for Integrative Science** Professor Heinrich Jaeger has an opening for a postdoc in his lab, to lead the work on the mechanical properties of self-assembled nanoparticle sheets. He is looking for a person who has extensive experience in nanoparticle synthesis, characterization and assembly. He is looking for a talented and motivated grad student who recently finished his or her PhD, or who will finish in the very near future. Please apply to Dr. Jaeger. The position is available immediately. <http://jfi.uchicago.edu/~jaeger/group/>

**Montclair State University, Medicinal Chemistry Postdoctoral Positions with David P. Rotella, PhD**

One (possibly two) postdoctoral positions will be available later this year for synthetic medicinal or organic chemists for an NIH-funded collaborative research project to optimize protein kinase inhibitors for treatment of malaria. Candidates will have earned a Ph.D. in synthetic medicinal or organic chemistry and have demonstrated experience in modern organic synthesis. Salary is competitive and fringe benefits are also available. Interested candidates should provide a full CV with a research summary and names of at least two references by email to [rotellad@montclair.edu](mailto:rotellad@montclair.edu).

**The Blitstein Institute of Hebrew Theological College** is looking for an enthusiastic and personable adjunct instructor for one section of General Chemistry with lab during Fall 2017. Prefer PhD or ABD, with teaching experience and ability to communicate the relationships between chemistry and medicine. The Blitstein Institute is a highly conservative college for Orthodox Jewish women, so the perfect instructor will be respectful of the culture of the students. Excellent opportunity to mentor female students in a small class (10-15) and to interact with other faculty. The class meets Mondays and Wednesday from 1-4 pm at 2606 W. Touhy, Chicago. The textbook is Introductory Chemistry: Concepts and Critical Thinking, by Charles H. Corwin. The semester runs from Sept 5- Jan 19, with a long fall break in October. Adjunct salary for PhD is \$4000 per semester. Send cover letter and resume/CV to Dr. Laurie Erickson, Chair of the Department of Health Sciences at [Erickson@htc.edu](mailto:Erickson@htc.edu)

**Motus Integrated in Holland, Michigan** has an opening for a Materials Scientist/Engineer  
Basic Responsibilities: Provide chemistry and manufacturing process expertise to tier one automotive interior supplier. Areas of expertise include engineering polymer formulation and processing to support company profitability. Candidates should be familiar with thermoplastics and thermoset polymers/composite materials and associated processes (polyurethanes, polypropylene, polyvinylchloride, etc..)

#### Specific Functions

1. Utilize experience with the manufacturing, formulating, processing and testing of polymers and systems.
2. Assess processing issues, root cause analysis and implementing countermeasures to reduce scrap and repair rates on production lines.
3. Develop and transfer new polymer technology into commercial value within company processes.
4. Optimize processing on current products
5. Monitor foam processing equipment condition and maintenance and recommend equipment improvements/upgrades.
6. Monitor injection molding equipment condition and maintenance and recommend equipment improvements/upgrades.
7. Apply existing knowledge and best practices of foam technology to current and future products.
8. Support quoting, innovation and advanced engineering activities with materials expertise and recommendations.
9. Support both launch and production in addressing quality and processing issues promptly.
10. Develop & maintain an experimental processing documentation system.
11. Requires travel to all Leon/Motus plant locations.
12. Advise on foam and plastics tooling feasibility and design optimization.
13. Solid understanding of interior trim products.
14. Solid knowledge of polyol and isocyanate manufacturing processes.

Reports To  
Director of Innovation

Education Required  
Bachelor's degree in chemical engineering, materials science and engineering, chemistry or related field.  
Advanced degree preferred.

Experience Required  
For a bachelor's degree candidates, 3-5 years minimum of professional experience in chemical engineering/manufacturing & processing in automotive interior applications. For advanced degree candidates, 0-2 years experience in chemical engineering/manufacturing & processing in automotive interior applications.  
Contact [jfennell@motusintegrated.com](mailto:jfennell@motusintegrated.com) (719) 648-9716

**Cabot Microelectronics Corporation in Aurora, Illinois** has an opening for a Research Scientist  
The Research Scientist - Analytical Development will play an integral role in providing solutions to product development challenges in the support of research and commercialization of high-performance CMP Polishing Slurries and Pads used in the production of advanced semiconductor devices. Leveraging your expertise in organic, organometallic, and/or analytical chemistry, you will identify sources of variation resulting from component interactions and provide mechanistic understanding for CMP slurry formulations.

Responsibilities include the following:

- Support of R&D efforts towards the mechanistic understanding of slurry components (particles/small molecules/polymers/surfactants) for the development of next generation CMP products.
- Analytical method development to support R&D and commercialization efforts, with an emphasis on NMR methodology  
Design of experiments for the characterization of CMP slurry components and variations within them.
- Grow in-house characterization capabilities and collaborate with external laboratories and universities to identify new characterization techniques.
- Document research results for intellectual property.

To be successful in this role, your background should include:

- Proven experience and demonstrable knowledge in a breadth of analytical methods and characterization techniques for chemical structure elucidation, (NMR, MS, FTIR, Chromatography).
- Demonstrated strong problem solving skills and the ability to develop novel analytical methodology and techniques for complex, multi-dimensional problems
- Results-oriented self-starter, capable of setting goals and then planning and executing complex research projects.
- Ability to balance multiple priorities and communicate timelines and results to key stakeholders in a clear and concise manner.
- Flexible, highly creative, innovative, and committed to continuous learning
- Graduate and/or post-doctoral experience, in university or industry, with examples of independent research Education: Ph.D. in Chemistry, Chemical Engineering, or Materials Science, or related degree/discipline is required.

Cabot Microelectronics Corporation, headquartered in Aurora, Illinois, is the world's leading supplier of CMP polishing slurries and a growing CMP pad supplier to the semiconductor industry. The company's products play a critical role in the production of advanced semiconductor devices, enabling the manufacture of smaller, faster and more complex devices by its customers. The company's mission is to create value by developing reliable and innovative solutions, through close customer collaboration, that solve today's challenges and help enable tomorrow's technology. <http://www.cabotcmp.com/>

**Cabot Microelectronics Corporation in Aurora, Illinois** has an opening for a Research Scientist - Formulation Development

The Research Scientist – Formulation Development will play an integral role in developing nanoparticle-based, high-performance CMP Polishing Slurries used in the production of advanced semiconductor devices. Leveraging your expertise in colloidal and materials science, you will innovate CMP slurry formulation designs by identifying new, effective slurry components, establishing key product characteristics, discovering mechanisms of action, and delivering differentiated performance to our customers.

Responsibilities include the following:

- Design, analyses, and interpretation of experiments that advance slurry formulation performance and mechanistic understanding through robust property-activity relationships.
- Generate innovative solutions to complex problems through the use of multiple disciplines and technical principles. Willing to explore more creative approaches to problem-solving.

- Document and communicate research results effectively including presentations/publications to external stakeholders and filing for patents as needed to protect intellectual property.
- As a good team player, collaborate across R&D and CMC functions by sharing research outcomes, adopting best practices, and driving for continuous improvement

#### Position Requirements

To be successful in this role, your background should include:

- Proven experience and demonstrated knowledge in at least one of these disciplines: colloidal science, nanoparticle technology, surface science, or material science.
- Post-doctoral experience, in university or industry, with examples of independent research in diverse areas is preferred.
- Demonstrated ability to innovate and drive original ideas within project research scope.
- Results-oriented self-starter, capable of effective project management including setting goals, planning and executing research, and balancing multiple
- Flexible, highly creative, innovative, and committed to continuous learning

Education: Ph.D. in Chemistry, Chemical Engineering, or Materials Science, or related degree/discipline is required.

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**The Department of Chemistry at Mount Holyoke College** invites applications for a tenure-track position in Analytical Chemistry at the Assistant Professor level to begin Fall, 2018. Applicants are expected to hold a PhD and post-doctoral experience is welcomed. The successful candidate will develop and teach courses in analytical chemistry, anchor this discipline within the department's curriculum, while also contributing to teaching at the introductory level and at the upper level in their area of expertise. Research interests in all areas and applications of analytical chemistry are welcomed, alongside a drive to develop an externally funded research program that will encourage and accommodate close collaboration with undergraduates. Superb facilities for teaching and research are available, housed in a modern, integrated science center.

Mount Holyoke is an undergraduate liberal arts college for women with 2,200 students and 220 faculty. Over half of the faculty are women; one-fourth are persons of color. The teaching load is 2/2. The College is located about 80 miles west of Boston in the Connecticut River Valley and is a member of the Five College Consortium, comprising Amherst, Hampshire, Mount Holyoke and Smith Colleges together with the University of Massachusetts, Amherst.

Mount Holyoke is committed to enriching the educational experience it offers through the diversity of its faculty, administration, and staff. The College seeks to recruit and support a broadly diverse faculty who will contribute to the College's academic excellence, diversity of viewpoints and experiences, and relevance in a global society. In pursuit of these aims the College strongly encourages applications from underrepresented groups in the academy, including African Americans, Hispanics, Native Americans, Alaskan Natives, Native Hawaiians, other Pacific Islanders, LGBTQ applicants, first generation college graduates, those who have followed non-traditional paths to college by demonstrating exceptional talent and drive in the face of adverse societal, economic or academic conditions, and those with a demonstrated commitment to applying and including diverse backgrounds and perspectives to learning, scholarship,

service, and leadership. All strong applicants will embrace the opportunity to work with an exceptionally talented student body that is diverse with regard to race, ethnicity, socioeconomic background and status, gender, nationality, sexual orientation, and religion.

Applications will be made on-line at <https://jobs.mtholyoke.edu> by submitting a CV and three documents concerning 1. a statement of teaching philosophy and pedagogical interests, 2. A detailed description of research plans, and 3. a statement of approach to mentoring a diverse student body. Applicants must also arrange for three letters of reference to be submitted on their behalf. Prompts for submission of these letters will be automatically generated once an online application is submitted. Review of completed applications, and their supporting letters, will continue until the position is filled. For additional information please go to: <https://www.mtholyoke.edu/acad/chemistry>

**MilliporeSigma** is the North American life science brand of Merck KGaA, Darmstadt, Germany – a leading science and technology company. It offers a broad range of innovative products and services to biotech and pharmaceutical drug therapies businesses. Through dedicated collaboration with the scientific and engineering communities, and as one of the top three R&D investors in the life science tools industry, the brand serves as a strategic partner to customers and helps advance the promise of life science. The Chemical Synthesis franchise is a critical component of MilliporeSigma's Lab and Specialty Chemical business. Historically known for its chemistry-enabling catalog of building blocks, reagents and catalysts, our focus has evolved to complement this traditional offering of synthetic solutions to include new areas of growth such as Chemical Biology and Peptide Synthesis.

Your role:

The Emerging Chemical Synthesis team is the innovative arm of the Chemical Synthesis franchise, contributing to the growth of the portfolio through commercialization of new technologies in new and existing, strategic focus areas. Your role will be to collaborate with internal (R&D, BD) and external (academic and industry) partners to identify, develop and commercialize innovative technology for synthetic chemistry, including new platforms that change how chemical synthesis is conducted.

Who you are:

A strong background in synthetic chemistry should be coupled with a scientific curiosity and keen interest in life sciences marketing. Further, the ability to recognize and cultivate technology areas that address unmet customer needs in Chemical Synthesis- and develop meaningful revenue- is crucial for this role.

- Fluent in Written and Spoken English
- PhD in Chemistry with experience in synthetic organic chemistry. Post Doc and/or Industry experience viewed favorably.
- 25% Travel should be expected

What we offer: With us, there are always opportunities to break new ground. We empower you to fulfil your ambitions, and our diverse businesses offer various career moves to seek new horizons. We trust you with responsibility early on and support you to draw your own career map that is responsive to your aspirations and priorities in life. Join us and bring your curiosity to life!

<https://career012.successfactors.eu/sfcareer/jobreqcareer?jobId=162876&company=merckgroup&username>

### **Supervisor, Product Development- Thermoplastic Polyurethane**

We are Covestro. We are curious. We are courageous. We are colorful. We redefine chemical material solutions with game-changing products. Let us empower you to push boundaries. Join us and our 16,000 colleagues now and together we will MAKE the world a brighter place.

Your tasks and responsibilities:

The primary purpose of the Supervisor- Product Development is to conduct and direct laboratory, pilot, and production scale trial experiments. Major Activities: • Manages a group of laboratory technicians and/or engineers • Interacts with customer and commercial organization to understand customer requirements to effectively direct new product development. • Interacts with raw material suppliers (sales and/or technical service personnel) to understand the potential and limitations of resins and additives that are considered for development. • Collaborates with Production, Engineering, and Technical Staff to scale-up development products to commercial production

Who you are:

- Master's Degree with 3+ years of industrial experience or Ph.D. with 0+ years of industrial experience in Chemical Engineering, Polymer Science or Related Science
- Polymer extrusion experience preferred, TPU and/or PC film products and processes a plus.
- Strong communication skills, both verbal and written.
- Capability and motivation to perform in the office, in the lab, and on the production floor.
- Ability to effectively motivate and manage group of R&D technicians.
- Strong computer skills (Excel, Word). Access and SAP familiarity a plus.

<https://career.covestro.us/job/Supervisor-Product-Development-Thermoplastic-Polyurethane--000009129.html><https://career.covestro.us/job/Supervisor-Product-Development-Thermoplastic-Polyurethane--000009129.html>

### **Postdoctoral Position in Polymerization Catalysis and NMR**

The Hilty group is seeking to fill a postdoctoral position with immediately available starting date in the Department of Chemistry at Texas A&M University.

The goal of the research project is to determine mechanisms and kinetics of postmetallocene catalysts for olefin polymerization. Significant gains in NMR signal by hyperpolarization of nuclear spins will be used for in-situ, real-time spectroscopy of ongoing polymerization reactions.

The ideal candidate will have research experience in organometallic chemistry, in the design or synthesis of catalytically active complexes, or in advanced NMR methods. Familiarity with analytical characterization, as well as with the mechanisms of the catalyzed reactions, is advantageous. A high motivation to apply this expertise to an interdisciplinary project, which includes polymerization catalysis and state-of-the-art NMR methodology, is expected. Interested candidates must hold, or be in the process of defending a PhD degree in chemistry or a related discipline.

Our group is developing methods employing hyperpolarization by dissolution dynamic nuclear polarization for applications in chemistry. Signals from thus hyperpolarized spins, recorded after a stopped-flow injection, reveal reaction kinetics and intermediate species on a sub-second to second time scale and inform on molecular structure, dynamics and interactions. The present project will use these methods as a unique way of accessing the activity, deactivation pathways, stereo structure formation, and other properties of modern polymerization catalysts.

Applicants for this position should send a letter of interest, curriculum vitae, and the names of three references to [chilty@tamu.edu](mailto:chilty@tamu.edu).

Texas A&M University is an Equal Opportunity employer.