

**2017 WEEKLY BULLETIN**  
**DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY**  
**EVANSTON, ILLINOIS**  
**May 15, 2017**

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

Tuesday May 16<sup>th</sup>:                      *Faculty Lunch Seminar: Eric Weitz*  
Tech K140  
12:00 – 1:00pm

Wednesday May 17<sup>th</sup>:                      *Chemistry Department Special Seminar:*  
*Yogi Surendranath, MIT*  
Tech L211  
4:00-5:00pm

**BIP**

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

**Arrivals**

We did not have any new arrivals

**Opportunities**

**Ecolab** is the world's leader in water, hygiene and energy technologies and services that protect people and vital resources. With 2015 sales of \$13.5 billion and 47,000 associate, Ecolab's products and services touch people every day in nearly every corner of the world. We are dedicated to helping our customers achieve their goals by working together to tackle the world's most pressing and complex challenges – clean water, safe food, abundant energy and healthy environments.

Innovation is a cornerstone of Ecolab's growth. As part of our global Research, Development & Engineering team, you will be inspired by our purpose, to the make the world cleaner, safer and healthier. Join our team of over 1,600 innovators dedicated to helping our customers meet their goals through innovative and effective science, technology, service and insights.

Together, we deploy unlimited resourcefulness to help businesses thrive and ensure the availability of the world's most precious natural resources for future generations.

You will work in a collaborative, customer-focused environment where your voice matters, your contributions are rewarded and you can make an impact.

It's time your talents took off – join our team and experience more.

Position Title: Lead Chemist, Research Analytical, RD&E

Location: Naperville, Illinois

Research Analytical, located at Ecolab's Naperville campus, part of Ecolab's Global Analytical and Microbiological Services, has an opening for a Lead Chemist in the polymer characterization area.

The successful candidate must have a background in Chemistry, Polymer Science, Materials Science or related fields. In addition, a good understanding of polymer chemistry and solution properties, and a working knowledge of various polymer characterization techniques are necessary. The Lead Chemist will work in teams with associates across Ecolab RD&E to provide polymer characterization expertise in product development, manufacturing, intellectual property and regulatory support.

Specific responsibilities include:

- In collaboration with scientists from other RD&E groups, assess teams' analytical needs and recommend analytical solutions to guide new product development and chemistry understanding
- Develop and execute polymer analysis methods for a variety of research projects, provide data interpretation and analysis
- Explore and develop new breakthrough approaches and methods to meet critical analytical needs of RD&E and maintain world-class capabilities in polymer characterization
- Document and publish research results

Basic Qualifications:

- Ph.D. degree in Chemistry, Polymer Science, Materials Science or related field
- Experience in Size Exclusion Chromatography (SEC), Multi-Angle Light Scattering (MALS), thermal characterization techniques (TGA, DSC), and other appropriate characterization of polymers
- Knowledge of polymer synthesis/chemistry and dilute solution properties of polymers
- Proven problem solving skills, innovative and creative spirit
- Ability to manage a variety of technical projects and respond to shifting priorities
- Excellent technical writing and verbal communication skills and ability to present results clearly and concisely to variety of audiences
- The ability to work independently and to work collaboratively with colleagues from other groups to develop partnering relationships
- Willingness to spend majority of time in a laboratory

Preferred Qualifications:

- 2-5 years of experience in industrial polymer synthesis or analysis
- Hands-on knowledge of chromatographic theory and techniques
- Experience with water soluble polymers and polyelectrolytes
- Experience in the characterization of structural polymers, associated polymers, and natural polymers
- Experience with HPLC and MALDI-MS
- Experience in hyphenated techniques: SEC-MS, SEC-NMR, SEC-FT-IR and 2D-LC

<http://bit.ly/2qUkpk0>

**The Chemours Titanium Technologies Process Development Group** located in Wilmington, DE has a Research Investigator position available. This is a highly visible, key role within the Company and the R&D function. This position will report to the Process Development Group Manager and will require significant interaction with scientists and engineers located at manufacturing facilities throughout the world.

The successful candidate will support and extend the competitive advantage of this best-in-class business by advancing capabilities in elemental analysis and providing insights into the elemental content of a wide variety of matrices found throughout the titanium dioxide manufacturing process.

The responsibilities of the position include, but are not limited to, the following:

- Supervise and contribute to the operation of the Elemental Analysis lab to ensure that customer needs are met in a safe, timely, efficient, and effective manner.
- Perform trace metals analysis on a wide variety of research, process, and product samples using ICP-MS, ICP-OES, and XRF instruments.
- Ensure proper sample preparation using standard techniques including digestion, extraction, separation, and dilution.
- Continually evaluate open literature and bring to light academic and industry trends that pertain to elemental analysis.
- Drive continuous improvement of lab operation and lead development and validation of new analytical methods when necessary.
- Ensure that analytical methods and results are accurate, properly documented, and effectively communicated.
- Provide training in areas of expertise.

In order to be qualified for this role, you must possess the following:

- PhD in Analytical Chemistry
- Minimum of 3 years of hands-on experience with ICP-MS techniques
- Supervisory experience
- Demonstrated ability to develop, adapt, and validate new analytical methods
- Proficiency in sample preparation techniques for trace metals analysis
- Strong awareness of chemical hazards and analytical laboratory operation
- Expertise in experimentation, data analysis, and interpretation of results
- Ability to work with people who have diverse backgrounds and skill sets
- Strong spoken and written communication skills
- Demonstrated ability to publish technical work through peer review

The following skill sets are preferred by the business unit:

- Experience with ICP-OES and XRF techniques
- Experience in analysis of inhomogeneous, mixed, and poorly defined samples
- Experience with microwave digestions
- Experience working with hazardous materials and particularly hydrofluoric acid
- Experience in a high volume analytical laboratory
- Proficiency in an extended range of analytical techniques
- Six Sigma certification or training in statistical analysis

Chemours is an equal opportunity employer.

Chemours is an E-Verify employer.

Candidates must be able to perform all duties listed with or without accommodation

<http://careers.chemours.com/jobsearch/job-details/research-investigator-elemental-analysis/JR914/1/>

**Bell Laboratories in Madison, Wisconsin** is accepting applications for an Analytical Chemist

Job Function: Perform quantitative method development, validation and analyses to support a chemical manufacturing facility.

Responsibilities:

1. Perform analytical method development, validation and quantitation of small molecules using UPLC / MS.
2. Develop high-throughput methods for the extraction of small molecules from solid matrices.
3. Perform quantitative analysis of gases using a GC with Headspace Analyzer.
4. Assist in developing qualitative methods for routine UPLC / MS usage by chemistry team.
5. Maintain laboratory equipment and confidently troubleshoot analytical instrumentation.
6. Review and evaluate data, write reports and robust protocols for smooth operation of laboratory facilities.

7. Keep and maintain a meticulous laboratory notebook with transparent scientific reasoning.
8. Assist in the creation of well-written, accurate, and timely reports to company management.
9. Solves complex analytical problems as well as recommend/implement continuous laboratory improvements
10. Recognize errors, identify root causes, and recommend process improvements
11. With minimal supervision, safely and effectively develop, establish, and validate analytical testing methodologies used to control raw materials, production intermediates, and final products.
12. Provide timely analytical services using other techniques such as HPLC, GC, Microwave and Karl Fischer titration to cross-functional groups within the organization.
13. Act as Study Director in support of new product development within compliance of Good Laboratory Practice (GLP) guidelines.

Education: Ph.D. in Analytical Chemistry with 0-3 years' experience or M.S. in Analytical Chemistry with 7-10 years' experience preferred.

Experience: Must include practical hands-on experience with the qualitative and quantitative analysis of small molecule pharmaceuticals. Must have hands-on and demonstrated expertise in creating quantitative analysis methods using GC, HPLC, LCMS and UPLC instrumentation. Knowledge and usage of Empower software is desirable.

Qualifications: Must demonstrate expertise in theory and application of LC-MS to develop quantitative analyses of small molecules embedded within a sample matrix. Must display strong analytical reasoning and communication skills in areas outside of Analytical Chemistry. A working knowledge of computer and work processing/spreadsheet programs, more JMP statistical discovery software is desired.

Familiarity with Waters instrumentation a plus. [www.belllabs.com](http://www.belllabs.com)

**The University of Chicago has an opening for a Teaching Support Specialist:** Supports instruction in teaching chemistry laboratories or classrooms by providing miscellaneous services such as: Preparation and testing of lecture demonstrations consistent with course content. Working with faculty or staff to determine the suitability of demonstrations for specific lectures. Informing faculty of new demonstration developments and materials. Instructing faculty in the proper usage of technical scientific apparatus. Promoting safety in handling hazardous equipment and materials. Researching and developing new lecture demonstrations and making improvements on existing demonstrations. Recommending purchases of computers, software, and technical apparatus and supplies. Providing general audio/visual support. Maintaining and documenting the use of demonstration equipment or materials and identifying building maintenance problems.

Bachelor's degree in chemistry or a relevant field required.

Advanced degree in a relevant field preferred.

A minimum of one year relevant experience preferred.

Lecture and/or demonstration related experience preferred.

Supervisory skills preferred.

Budget management skills preferred.

Ability to train others preferred.

Knowledge of research techniques or methods required.

Ability to develop demonstrations required.

Ability to design and construct relevant instructional equipment required.

Knowledge of basic laboratory procedures and safety requirements required.

Analytical skills required.

Problem-solving skills required.  
Attention to detail required.  
Organizational skills required.  
Verbal and written communication skills required.  
Interpersonal skills required.  
Ability to work independently and as part of a team required.  
Ability to work on multiple projects simultaneously, set priorities, and meet deadlines required.  
Knowledge of computers and relevant software required.

<http://www.uchicago.edu/>

Scroll down and click Job Opportunities  
Go to University Job Opportunities  
Search postings by requisition number 102370

### **Swiss Federal Institute of Technology Zurich, Postdoctoral Position, Nanoscale Spectroscopy**

We seek to fill a postdoctoral position in our research group funded by an ERC Advanced grant. The topic of the research will be on the development and application of tip-enhanced Raman spectroscopy (TERS), with the aim to study sensitive 2-dimensional molecular layers. TERS combines scanning probe microscopy (SPM) with optical spectroscopy, and lends chemical specificity to SPM, which greatly extends its range of applications.

Prerequisites: Ph.D. in Chemistry or related area, very strong background in analytical chemistry, physical chemistry, experience with Raman spectroscopy or scanning probe microscopy. Motivation to work with sophisticated instrumentation, spectroscopy, and computer-assisted data evaluation is important. Further information: see <http://www.zenobi.ethz.ch/> -> Nanoscale Analysis. Earliest possible Starting date: 1. September 2017 or upon mutual agreement.

Applications with CV, publication list, and 2 letters of recommendation directly to Prof. Renato Zenobi (by May 31, 2017 for a starting date of 1.9.2017). Later applications will be accepted until the positions is filled.

### **Swiss Federal Institute of Technology Zurich, Ph.D. Student Positions, Nanoscale Spectroscopy**

We seek to fill several Ph.D. student positions in our research group funded by an ERC Advanced grant. The topic of the Ph.D. theses will be on the development and application of tip-enhanced Raman spectroscopy (TERS), with the aim to study sensitive 2-dimensional molecular layers. TERS combines scanning probe microscopy (SPM) with optical spectroscopy, and lends chemical specificity to SPM, which greatly extends its range of applications.

Prerequisites: M.Sc. degree, Diploma or equivalent in Chemistry or related area, strong background in analytical chemistry, physical chemistry and instrumentation. Motivation to work with sophisticated instrumentation, spectroscopy, and computer-assisted data evaluation is important. Further information: see <http://www.zenobi.ethz.ch/> -> Nanoscale Analysis.

Earliest possible Starting date: 1. September 2017 or upon mutual agreement. Applications with CV, publication list, transcripts & grades received, and 2 letters of recommendation directly to Prof. Renato Zenobi (by May 31, 2017 for a starting date of 1.9.2017). Later applications will be accepted until all open positions are filled.

**Swiss Federal Institute of Technology Zurich Senior Scientist Position in Nanoscale Spectroscopy**

We seek to fill a senior scientist position in the framework of a project funded by a 5-year ERC Advanced grant. The topic of the research will be on the development and application of tip-enhanced Raman spectroscopy (TERS), with the aim to study sensitive 2-dimensional molecular layers. TERS combines scanning probe microscopy (SPM) with optical spectroscopy, and lends chemical specificity to SPM, which greatly extends its range of applications. This position can develop into a longer term appointment.

Prerequisites: Ph.D. in Chemistry or related area, strong background in analytical chemistry, physical chemistry and instrumentation, experience with Raman spectroscopy or scanning probe microscopy. Motivation for assuming responsibilities related to the whole project and for training of younger scientists (Ph.D., M.Sc., and undergraduate students). Knowledge of German is advantageous, but not required. Further information: see <http://www.zenobi.ethz.ch/> -> Nanoscale Analysis. Earliest possible Starting date: 1. September 2017 or upon mutual agreement.

Applications with CV, publication list, and 2 letters of recommendation directly to Prof. Renato Zenobi (by May 31, 2017 for a starting date of 1.9.2017). Later applications will be accepted until the positions is filled.

**University of Wisconsin – Madison** Professor Clark Landis is looking for a postdoctoral fellow to join his group in the general area of catalytic alkene polymerization. The position emphasizes (1) developing new micro-rapid quench reactors and (2) applying GPC methods that use quench label technology for rapid kinetic modeling of metal catalyzed alkene polymerization. Most of the work will be applied to detailed analysis of chain-shuttling to produce blocky olefin copolymers. Expertise in the handling and characterization of air-sensitive materials is essential. Although helpful, experience with chemical kinetics analysis and with instrumentation development is helpful but not essential.

The interested applicant should send me their CV, a brief summary of their research, and two letters of recommendation. [www.chem.wisc.edu/~landis](http://www.chem.wisc.edu/~landis)

Contact: Clark Landis, University of Wisconsin – Madison [landis@chem.wisc.edu](mailto:landis@chem.wisc.edu)

**The Department of Chemistry and Biochemistry at Washington and Lee University** seeks to fill a full-time Visiting Position to teach Organic Chemistry and the associated lab. The position is for one year. The position starts in August 2017 and requires a Ph.D. in Chemistry and relevant teaching experience. Review of applications will begin immediately and continue until the position is filled. W&L is a highly selective, independent, co-educational, liberal arts college of 1800 students located in Lexington, VA, three hours southwest of Washington, DC. W&L is an equal opportunity employer. Applicants should send a CV, a letter of application, a one page statement of teaching philosophy, unofficial graduate and undergraduate transcripts, and three letters of reference to: Steve Desjardins, [Chemistry@wlu.edu](mailto:Chemistry@wlu.edu)

**The Shepherd Color Company** is seeking a bachelors-level chemist for its Research and Development team. As a member of that team you'll work in a creative and collaborative atmosphere developing new colored inorganic pigments or other mixed-metal-oxide materials. The Shepherd Color Company is a privately-owned company in Cincinnati, Ohio. Although it's principally a supplier of mixed-metal oxides used as colored pigments, Shepherd Color is also a leader in the manufacture of inorganic materials used for other chemical and physical properties.

Applicants should have a B.S. or B.A. in chemistry or materials science with a particular interest in inorganic materials. The job is a research and development job. Prior research experience is not required,

but it is valuable, as it can help establish the applicant's capabilities for research. Most important is that the applicant is excited about inorganic materials research, which involves lab experimentation, scaling-up of synthetic methods, and literature research; and constantly expanding his/her knowledge base. The applicant needs to be intelligent, a good learner, highly motivated, and adept at collaborating with others.

The work atmosphere in the Research and Development group at Shepherd Color is one where the chemists are exposed to a variety of tasks and responsibilities, interact regularly with other departments, and are challenged to advance technology, improve existing products, and develop new products that will ensure the future success of the company. Research Chemists at Shepherd Color are able to handle multiple projects and changing priorities. They enjoy developing new technologies and applying them in new, technically-advanced products and the reward of following the impact of their developments on the marketplace.

To apply, please provide a resume and a cover letter explaining why you believe you are a good fit for the position. Applications can be made by following this link:

[https://workforcenow.adp.com/jobs/apply/posting.html?client=shep&jobId=183266&lang=en\\_US&source=CC2](https://workforcenow.adp.com/jobs/apply/posting.html?client=shep&jobId=183266&lang=en_US&source=CC2) or through the company website at [www.shepherdcolor.com](http://www.shepherdcolor.com).

**The Department of BioMolecular Sciences in the School of Pharmacy at The University of Mississippi** is seeking qualified applicants for a full time, 12-month, tenure-track position at the rank of Assistant, Associate, or Full Professor. We seek candidates with expertise in the field of medicinal chemistry or the application of organic synthesis to drug discovery who possess a record of distinguished and innovative research (as evidenced by a significant publication record and the potential to secure extramural funding) and a commitment to excellence in education. Applicants applying for the higher ranks should have a nationally recognized research program with recurrent success in securing extramural funding and excellent teaching credentials.

The University of Mississippi is the flagship university for the State of Mississippi. A world-class public research university, the institution has a long history of producing leaders in public service, academics and innovative research. The School of Pharmacy is on the main campus in Oxford, a community of approximately 19,000 residents that has been recognized nationally as one of America's best places to live. *The Chronicle of Higher Education* has named The University of Mississippi as one of the "Great Colleges to Work For." The Department of BioMolecular Sciences has 13 full-time faculty with research emphases in medicinal chemistry, pharmacognosy, pharmacology, and environmental toxicology. The faculty have affiliations with the Research Institute of Pharmaceutical Sciences and collaborative opportunities in the National Center for Natural Products Research. The department has teaching responsibilities in several degree programs, including the Pharm.D (Doctor of Pharmacy) as well as M.S. and Ph.D programs in Pharmaceutical Sciences.

The review of applications will begin immediately and continue until a suitable pool of applicants is established. Applicants must have a Ph.D. degree in Medicinal Chemistry, Chemistry, Organic Chemistry, or a related field in the pharmaceutical sciences as well as post-doctoral experience. Applicants should provide a cover letter outlining qualifications for the position, a detailed description of research plans, a one-page executive summary of the research plan, a statement of teaching philosophy, a curriculum vitae, and the name and contact information of four references through The University of Mississippi's online employment site at <https://jobs.olemiss.edu>. For additional information please contact, Prof. David A. Colby, Search Committee Chair, 662-915-1766, [dacolby@olemiss.edu](mailto:dacolby@olemiss.edu).