

2018 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS
February 19, 2018

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

Tuesday February 20th: *Faculty Lunch Seminar: Tobin Marks*
Tech K140
12:00-1:00pm

Friday February 23rd: *Department of Chemistry Colloquium:*
Omar Farha, Northwestern University
Tech LR3
4:00-5:00pm

Announcements:

Mercouri Kanatzidis has been selected to receive the 2018 Chemical Pioneer Award from the American Institute of Chemists.

Established in 1966, the award recognizes chemists or chemical engineers who have made outstanding contributions advancing the science of chemistry or impacting the chemical industry or the chemical profession.

Due to be receive the award in Philadelphia on 10 May 2018, Mercouri will specifically be recognized for defining the field of chalcogenide compounds (sulfides, selenides and tellurides) over the past three decades.

On June 10, 2018, the Technion will award the 2017 Harvey Prize in Science and Technology to Professor Tobin Marks from Northwestern University (USA) and to Professor Carla Shatz from Stanford University (USA). The \$75,000 prize, named after longtime Technion supporter Leo Harvey (1887-1973), was established in 1972 as a bridge of good-will between Israel and other nations, and is granted annually to individuals who have made significant contributions to humankind. The Harvey Prize is considered by many as a precursor to the Nobel Prize, with some 20% of the Harvey Prize laureates later becoming Nobel laureates. Shortly after winning last year's Harvey Prize, Professor Emeritus Rainer Weiss and Professor Emeritus Kip Stephen Thorne, who led the discovery of gravitational waves in 2015 in the framework of the LIGO collaboration, were granted the 2017 Nobel Prize in Physics.

Professor Tobin J. Marks will receive the Harvey Prize for his ground-breaking research that has both fundamental and practical significance, in the areas of catalysis, organo-f-element chemistry, electronic and photonic materials, and coordination chemistry, all of which have strongly impacted contemporary chemical science.

Born in 1944, Professor Marks is a member of the Department of Chemistry at Northwestern University. He completed his BSc in Chemistry at the University of Maryland in 1966 and his PhD at MIT, in 1971. He has received many prizes throughout his academic career, including the Karl Ziegler Prize, granted by the German Chemical Society; the Priestley Medal of the American Chemical Society; and the National Medal of Science (USA). In 2011, he won the Schulich Excellence Award from the Technion.

Professor Marks is a world-renowned expert in many fields, including catalysis, printed electronics and solar energy conversion devices. He has developed a variety of recyclable plastics, screens, electronic components and cells for conversion of solar energy to electricity. His specialties include polymer and metal chemistry, photonic materials, super-conductors and organometallics.

SAVE THE DATE: Mark A. Ratner Series of Scholars April 9, 2018

Please save the date for the inaugural *Mark A. Ratner Series of Scholars* lecture, given by Rachel Armstrong, Professor of Experimental Architecture at Newcastle University, on the afternoon of April 9th. The time and place will be determined soon.

See Prof. Armstrong's TED talk here:

https://www.ted.com/talks/rachel_armstrong_architecture_that_repairs_itself

BIP

BIP meets every Friday in Tech K140 at 11:00am

Arrivals

Liang-Wen Feng joined the Marks Group

Opportunities

Northland College in Ashland, Wisconsin is accepting application for an Assistant Professor of Chemistry. This is a tenure track position .

Northland College is an environmentally-committed college on the shores of Lake Superior. The Environmental Science Program at the College invites dynamic and proven educators to apply for a tenure track assistant professor position in chemistry. A PhD or ABD-status in chemistry, or related field, is required.

<https://my.northland.edu/job/assistant-professor-chemistry-tenure-track/>

EcoLab in Naperville, Illinois has an opening for a Lead Chemist: Surface Characterization, Research Analytical, RD&E

Research Analytical, located at Ecolab's Naperville campus, part of Ecolab's Global Analytical and Microbiological Services, has an opening for a Lead Chemist focused on surface characterization.

The successful candidate must have a background in Materials Science, Chemistry, or related fields. In addition, a good understanding of analytical and characterization techniques like IR, Raman, optical spectroscopy and mechanical properties and/or electrochemical characterization are necessary to succeed in this position. The Lead Chemist will work in teams with associates across Ecolab RD&E to provide surface characterization expertise in product development, manufacturing, intellectual property and regulatory support.

For more Ecolab news and information, visit www.ecolab.com.

Follow us on Twitter [@ecolab](https://twitter.com/ecolab), Facebook at facebook.com/ecolab or LinkedIn at linkedin.com/company/ecolab.

Cross World Medics is currently accepting applications for our 2018 Summer Shadow and Service Programs. We are offering **1-8 week Medical, Nursing, Midwifery, and Veterinary programs in South Africa!**

As a World Cross Medics Intern you will:

- Gain international experience on the ground in global health initiatives.
- Shadow health professionals and cultivate lifelong relationships.
- Distinguish yourself as an applicant to medical/graduate school
- Immerse yourself in diversity through service and excursions.
- Collaborate with groups of university students from around the world.
- Enhance health care skills in real-world environments

Apply here for our Volunteer Programs: [2018 Application](#)

Application Deadline: Feb. 28, 2018 Learn more about our Health [Program](#) here.

Archer Daniels Midland Company is accepting applications for a Research Scientist, Thermochemical Catalysis in Decatur, Illinois This is a full time, exempt position

Position Summary:

The position of Research Scientist reports to the Director, Thermochemical Catalysis. The role is responsible for the conception and implementation of research projects as part of ADM's overall Research and Development program in support of existing businesses and for development of technology options for business growth. The role includes planning and execution of laboratory experimental programs to achieve specified project objectives. Work activities entail hands-on laboratory experimentation and can include direction of support teams of technicians, chemists and analysts.

Responsibilities:

- Demonstrate leadership in safety behaviors and safe laboratory practices including adherence to ADM safety processes and guidelines.
- Mentor, coach and serve as a role model for colleagues around good safety practices and behaviors.
- Function as an individual technical contributor within a cross-functional team of research scientists, chemists and technicians.
- Develop experimental plans to accomplish project goals.
- Set up, maintain, and operate laboratory reactor systems and data-acquisition software for continuous and batch reactions.
- Interpret, synthesize, and analyze data using scientific/statistical techniques.
- Report on status of research activities through verbal updates, written reports, and presentations to ADM management, colleagues and external parties as required.
- Set up, operate, and maintain laboratory analytical equipment.
- Manage multiple tasks, projects, and work priorities to deliver individual and team goals and objectives on schedule and on budget.
- Prepare invention disclosures to protect patentable discoveries and valuable intellectual property and know-how.
- Monitor and share within ADM key external technology and patent activities including relevant intellectual property disclosures and scientific publications.
- Manage individual professional and technical development including continuous advancement of knowledge, skill and capabilities in field of expertise.
- Supervise, mentor and help develop colleagues in field of expertise.

Requirements

- Ph.D. in chemistry or chemical engineering with relevant experience in catalysis and process chemistry.
- Hands-on experience in batch and flow catalytic reactor set-up, operation and maintenance/repair.
- Knowledge and experience with a wide range of analytical instrumentation including HPLC, GC, GC-MS, LC-MS, FT-IR NMR and UV-Vis spectroscopy.
- Knowledge and experience in catalyst design, development, preparation, characterization and evaluation including reaction kinetics and mechanisms.
- Knowledge and experience in handling of hazardous materials and operations including hazard analysis and commination.
- Working knowledge of Excel, PowerPoint, Outlook, SharePoint, Skype, Microsoft Office and ability to learn and operate other computer software and laboratory process automation tools as needed.
- Minimal (less than 10%) travel required.

https://sjobs.brassring.com/TGnewUI/Search/Home/Home?partnerid=25416&siteid=5998#jobDetails=2064599_5998

The Department of Chemistry at Yale University (New Haven, CT) invites applications for two (2) Preceptor positions. Preceptors are PhD-level scientists who will participate in undergraduate teaching, working closely with faculty members. One position will focus on *General Chemistry* courses and the other on *Organic Chemistry* courses. Specific Preceptor responsibilities will include leading of discussion and/or laboratory sections, assisting instructors of record to design course content and assessment tasks, contributing to the training of graduate-student teaching assistants, participating in the development of new laboratory modules, conducting regular review sessions, and grading. The positions will begin on August 13, 2018 and initially will be offered at the rank of Lecturer for a one (1) year term, which will be renewable for up to three (3) years based on performance.

Applicants should send their *curriculum vitae*, a short statement describing their teaching philosophy, and arrange for three confidential letters of recommendation. Please submit all materials through <http://apply.interfolio.com/48792>. Review of applications will commence on March 9, 2018 and continue until the positions are filled.

Yale University is an Equal Opportunity/Affirmative Action Employer and applications from women, persons with disabilities, underrepresented minority group members, and protected veterans are especially encouraged.

3M is seeking a Sr. Synthetic Chemist for the Electronics Materials Solutions Division (EMSD) located in Maplewood, MN. At 3M, you can apply your talent in bold ways that matter. Here, you go.

Job Summary:

The person hired for the position of Sr. Synthetic Chemist will primarily be responsible for synthesis of new fluorinated materials supporting 3M™ Novec™ Engineered Fluids. This is an exciting position working in an attractive technical environment. This position requires an individual with strong leadership skills, who is a good decision maker with ability to collect facts and separate symptoms from problems. Typical development activities will take place in the lab, working directly with application development engineers.

Primary Responsibilities include but are not limited to the following:

Technical Contributions.

Good working knowledge of organic synthesis and fluorine chemistry

Knowledge / prior experience of handling TFE, HFP, CTFE and other fluorochemical gasses

Techniques for handling materials in high pressure autoclaves,
Use of purification/analytical techniques for organic chemistry and synthesis (F NMR, GC etc)
Experience with Lewis acids such as SbF₅, NbF₅, etc.

Interactions. Leads interactions with cross functional global labs. Understands specific customer customer needs, processes, and applications. Identifies and communicates new opportunities, markets, applications and competitive information. Provides customer viewpoint and influences strategy at the business team level. Participate/lead New Product Introduction (NPI) teams as directed. Work directly with application engineers throughout development of new materials.

Leadership. Assumes leadership role for technical programs of importance within the division. Programs may include line extensions or significant new applications of existing products requiring new qualifications or claims. Programs may also include participation in the development of new industry standards, best practice guidelines, or regulations.

Intellectual Property. Review and/or generate intellectual property positions in response to customer needs at the business level, including proprietary advances, Confidential Disclosure Agreements (CDA), patents, trade secrets and documents, experimental data/observations in technical notebooks or electronic files.

Communications. Communicates results of technical tasks to business group and/or appropriate technical community. Communicates relevant findings to external parties/customers as appropriate. Generates and provides Voice of Customer and Industry trends back into the Business Unit (BU). Provides the Voice of Tech to the 3M Sales force. May establish and leverage a multi-country technical network.

Corporate Initiatives. Leads application of key corporate initiatives and appropriate tools.

Strategic Planning. May participate in technical strategic planning at the business level, providing input on customer needs and direction.

Basic Qualifications:

- Master's degree or higher in Chemistry from an accredited institution
- Minimum of one (1) year laboratory experience
- Minimum of one (1) year organic chemical synthesis experience

Preferred Qualifications:

- Ph.D. in Chemistry from an accredited institution
- Experienced fluorine synthetic chemist
- Knowledge and experience of Fluoropolymer synthesis
- Experience contributing as a team member on a global cross-functional team
- Experience with application engineering where rapid solutions and a quick turnaround are required on limited scope projects
- Successful record of customer interaction, excellent technical presentation skills, interpersonal abilities, and multi-tasking skills
- Proven behavior of combining technical requirements with commercially viable solutions to result in winning business strategy
- Excellent verbal communication skills at multiple levels of internal as well as external customer and supplier organizations
- Industry expertise, ideally with a record of publications/patents
- Microsoft Office proficient

Location: Maplewood, MN Travel: May include up to 15% domestic and international

<https://3m.wd1.myworkdayjobs.com/Search/job/US-Minnesota-Maplewood/Sr-Synthetic-Chemist--Maplewood--MN- R00927545-1>

Department of Chemistry and Biochemistry at Duquesne University, located in Pittsburgh, Pennsylvania is accepting applications for a postdoctoral position in solid-state chemistry. The research project includes the structural and physicochemical characterization of new, multinary chalcogenides with promising infrared nonlinear optical properties, among others. A variety of synthetic methods will be pursued to prepare these materials as microcrystalline powders and single crystals, such as traditional high-temperature solid-state synthesis, polysulfide flux synthesis, iodine vapor transport and Bridgman growth. Characterization methods will include, but are not limited to, powder and single crystal X-ray diffraction, solid-state UV/Vis/NIR diffuse reflectance spectroscopy, thermal analysis, scanning electron microscopy and energy dispersive spectroscopy. Qualified applicants should possess a Ph.D. degree before they begin the position. A background in solid-state chemistry, condensed matter physics or materials science and experience using single crystal X-ray diffraction is essential. Experience performing Reitveld refinements (GSAS or other program) and/or DFT calculations (WIEN2K or other program) is desirable, but not necessary. Other skills that would be of use for this project include the ability to work with data obtained via neutron powder diffraction, as well as magnetic, nonlinear optical and electrical property measurements. Interested applicants should send a complete resume and a short cover letter to Professor Jennifer A. Aitken via email as soon as possible, aitkenj@duq.edu. Three letters of recommendation may be requested from applicants at a later date, but should not be sent with these initial application materials. The e-mail should have the subject heading "Solid-State Postdoc Position – Applicants last name".

Washington State University is seeking qualified candidates for a permanent full-time tenure track faculty position as an Associate Professor or Full Professor in the Department of Chemistry at the WSU Main Campus in Pullman, Washington.

In this renewable joint position with Pacific Northwest National Laboratory, you will also serve as the Director of the Institute of Nuclear Science and Technology. This recently formed Institute consolidates the national and international leadership found at WSU and PNNL within the domain of nuclear science and technology, particularly as it pertains to nuclear forensics, environmental remediation and waste storage, and the fate of materials in radiation environments. With major institutional investments, the Institute is elevating the scientific and technical impact of nuclear research by leveraging the unique facilities and complementary capabilities between WSU and PNNL to build leadership and signature programs in nuclear science.

The Director will help shape the direction and lead the growth of the Institute, engaging with partners, recruiting a diverse group of new members, and establishing and nurture collaborative relationships with non-WSU members.

Applicants with a Ph.D. in Chemistry or a related discipline, an academic research program related to Chemistry in Nuclear Science and Technology, the ability to teach graduate and undergraduate courses in chemistry (including service courses), and excellent management and communication skills are strongly encouraged to apply.

The full posting is at: <https://www.wsujobs.com/postings/35783>

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The College of Lake County is currently searching for one full-time faculty member to be housed in the Biological & Health Sciences division. Responsibilities for this position include teaching courses in the chemistry department. This position will be involved in the instruction of first and second year college level courses to a diverse student body during daytime, evening, and Saturday classes at our main campus, extension sites and local business and industry sites. The faculty member will develop, prepare, and revise instructional materials as well as participate in program evaluation and curriculum planning and development. The instructor will participate in department, division, and general faculty meetings, serve on division and college committees, and participate in other forms of college service. Instructors are required to maintain an active program of professional development related to institutional objectives. The instructor will utilize appropriate technology to deliver instructional materials, maintain grades, provide timely communications with students, etc. The instructor shall maintain appropriate office hours for student access. Maintains current knowledge of subject matter via professional organization membership, attendance of seminars, conferences and classes, and professional publications. There is potential for the instructor to lead efforts for increasing course offerings and growing enrollments at the Lakeshore Campus. More information can be found at: <https://jobs.clcillinois.edu/postings/9842>.

PhD Organic Medicinal Chemist—PTC Therapeutics The expansion of discovery research at our South Plainfield, NJ research facility has resulted in the creation of additional positions for PhD Organic Medicinal Chemists. Selected candidates will be responsible for the design and synthesis of novel pharmacologically active compounds using synthetic organic and medicinal chemistry techniques. For more information about PTC Therapeutics visit www.ptcbio.com.

Requirements:

- Recent completion/soon to be completed PhD in organic chemistry, or PhD in organic chemistry and post-doctoral position
- Thorough knowledge of the practical and theoretical aspects of synthetic organic chemistry, including reaction mechanisms, multi-step organic chemistry, modern analytical techniques for compound purification and characterization, and database searching techniques for relevant literature and reaction precedents
- Demonstrated record of achievement as reflected by publications in peer-reviewed journals or presentations at chemistry focused conferences/events

For interested applicants, please send a resume and brief research summary to Jigar Patel (jigar.patel@ptcbio.com).

*Please indicate your current citizenship and visa requirements

University of San Diego is accepting applications for a Postdoctoral Researcher Position in biological soft matter physics. Excellent candidates are invited to apply for a postdoctoral researcher position in the Robertson-Anderson lab in the Physics and Biophysics Department at the University of San Diego. The Robertson-Anderson lab specializes in understanding the molecular-level dynamics that give rise to novel physical properties present in soft biological materials. We develop and use force spectroscopy and fluorescence microscopy techniques to characterize molecular transport and microrheological properties of these materials. We also aim to develop new bio-inspired composite materials with novel emergent properties. The open position is for a cutting-edge Air Force project to elucidate the molecular dynamics governing DNA-based composite biomaterials. The postdoc will be responsible for developing instrumentation/techniques as well as DNA purification and fluorescence assays; and designing and executing microrheology experiments and analysis. Candidates should have experience with force spectroscopy and image analysis and be well-versed in Matlab and Labview. Knowledge/experience with soft matter physics and molecular biochemistry techniques is preferred. University of San Diego is a primarily undergraduate institution so the postdoc will be expected to help advise undergraduate researchers, and will have opportunities to teach depending on interest and research progress. Candidates should have a PhD in physics although related doctoral degrees will be considered. Applications should include a cover letter, CV, and 3 letters of recommendation. All materials should be emailed to randerson@sandiego.edu. Applications will be considered until the position is filled.

Physics and Biophysics Department at the University of San Diego. Excellent candidates are invited to apply for a postdoctoral researcher position in the Robertson-Anderson lab in the Physics and Biophysics Department at the University of San Diego. The Robertson-Anderson lab specializes in understanding the molecular-level dynamics that give rise to novel physical properties present in soft biological materials. We develop and use force spectroscopy and fluorescence microscopy techniques to characterize molecular transport and microrheological properties of these materials. We also aim to develop new bio-inspired composite materials with novel emergent properties. The open position is for a cutting-edge Air Force project to elucidate the molecular dynamics governing DNA-based composite biomaterials. The postdoc will be responsible for developing instrumentation/techniques as well as DNA purification and fluorescence assays; and designing and executing microrheology experiments and analysis. Candidates should have experience with force spectroscopy and image analysis and be well-versed in Matlab and Labview. Knowledge/experience with soft matter physics and molecular biochemistry techniques is preferred. University of San Diego is a primarily undergraduate institution so the postdoc will be expected to help advise undergraduate researchers, and will have opportunities to teach depending on interest and research progress. Candidates should have a PhD in physics although related doctoral degrees will be considered. Applications should include a cover letter, CV, and 3 letters of recommendation. All materials should be emailed to randerson@sandiego.edu. Applications will be considered until the position is filled.