

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

April 9, 2018

For full schedule, including Center events, please see the Department Calendar:

<http://www.chemistry.northwestern.edu/events/calendar.html>

- Monday April 9th: *Ratner Series of Scholars Inaugural Symposium:*
 Professor Rachel Armstrong, Newcastle University
 Harris Hall L107
 11:15am -12:15pm
 See Prof. Armstrong's TED talk here:
 https://www.ted.com/talks/rachel_armstrong_architecture_that_repairs_itself
- Tuesday April 10th: *Faculty Lunch Seminar: Milan Mrksich*
 Tech K140
 12:00-1:00pm
- Friday April 13th: Department of Chemistry Colloquium:
 Songhi Han, University of California – Santa Barbara
 Tech LR3
 4:00-5:00pm

BIP

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

Arrivals

Hongliang Chen joined the Stoddart Group
Hector Fernandez Caro joined the Gianneschi Group
Ah-Reum Kim joined the Farha Group
Douglas Philp joined the Stoddart Group
Taeung Yoon joined the Farha Group

Opportunities

The Mund-Lagowski Department of Chemistry and Biochemistry at Bradley University is seeking an individual with a strong commitment to excellence in teaching for a one-year appointment as a sabbatical replacement at the rank of Visiting Assistant Professor beginning in August 2018.

Bradley University is a top-ranked, prestigious, private university in Peoria, Illinois, offering 5,400 undergraduate and graduate students the opportunities, choices and resources of a larger university and the personal attention and exceptional learning experience of a smaller university. Bradley offers a comprehensive array of undergraduate and graduate academic programs in business, communications, education, engineering, fine arts, health sciences, liberal arts and sciences, and technology. The University is located on an 85-acre campus in Peoria, the largest metropolitan area in Central Illinois.

Candidates must have a Ph.D in Chemistry or Biochemistry. ABD candidates will be considered for the position, but completion of the doctoral degree is required by the start date. Teaching responsibilities will include introductory chemistry courses and advanced chemistry laboratories. Successful candidates must be able to: clearly communicate chemistry concepts, maintain good chemical hygiene in a laboratory setting, and supervise student assistants.

Qualified candidates must send, as a single PDF file: (1) a letter of application, which includes a brief summary of qualifications and motivation for pursuing a career in academics, (2) curriculum vitae, (3) copies of undergraduate and graduate transcripts, and (4) the names and contact information for three professional references to chmsearch@bradley.edu. Information regarding how the candidate will contribute to promoting diversity and equal opportunity should be provided either within the letter of application or in a stand-alone diversity statement.

To ensure full consideration, all application materials must be received no later than April 1st; however, review of applications begins immediately and will continue until the position is filled. Employment with Bradley University is contingent upon satisfactory completion of a criminal background check. Visa sponsorship is not available for this position. The Department is ACS certified; see www.bradley.edu/las/chm for general information about the Department.

Bradley University is an Equal Opportunity/Affirmative Action Employer. The administration, faculty and staff are committed to attracting qualified candidates from underrepresented groups.

The inorganic & materials chemistry laboratory (IMCL) at the Technion – Israel Institute of Technology (<http://www.deruiterlab.com>) is looking for excellent students at all levels.

Research within the laboratory focusses on supramolecular surface chemistry, and in particular, the self-assembly of inorganic metal complexes on conductive surfaces for electrocatalysis. Using non-covalent interaction to self-assemble supramolecular materials is an attractive approach towards addressing challenging problems pertinent to global energy concerns. Highly structured materials will be generated via a sequence dependent Layer-by-Layer (LbL) assembly strategy with various inorganic building blocks. By using LbL assembly, materials of variable thickness can be generated, vastly increasing the surface area for catalytically relevant transformations. The LbL assembly is facilitated by non-covalent interactions that involve pyridine-metal coordination chemistry, cyclodextrin host-guest interactions, and hydrogen bonding. The used molecular catalysts are based on first-row transition metals that are modified with supramolecular connectors, enabling their incorporation into larger supramolecular architectures. Successful candidates will work in a multi-disciplinary team within the inorganic & materials chemistry laboratory (<http://www.deruiterlab.com>) or within some of the excellent research centers present on the

Technion Campus:

1. Grand Technion Energy Program center (GTEP; <https://gtep.technion.ac.il/>) .
2. Russel Berry Nanotechnology Institute (RBNI; <https://rbni.technion.ac.il/>)

The aim the project will be developing new self-assembled materials suitable for water oxidation, oxygen reduction, hydrogen evolution, and carbon dioxide. Electrocatalytic reduction to ammonia is also within the scope of the program but is one of the future targets.

Accordingly, we are looking for excellent candidates (M.Sc., Ph.D, and Post-Doctoral) to fulfill three positions within our laboratory:

1. Synthetic Inorganic Chemists. We are looking for students with a background or interest in synthetic inorganic and organometallic chemistry. Emphasis is on the synthesis and characterization of first-row transition metal complexes that are modified with supramolecular connectors. A background with manipulation air-sensitive compounds is preferred, as well as with modern spectroscopic techniques.

2. Electrocatalysis Expert: Experience with various electrochemical techniques – both in solution and on the surface – is preferred. Quantitative analysis of gas evolution during electrocatalysis and benchmarking of surface-confined supramolecular catalysts is envisioned. The project is highly multidisciplinary and involves cooperating with synthetic, surface, and materials chemists.

3. Supramolecular Chemist: Students experienced with self-assembly and supramolecular chemistry are encouraged to apply, preferably with experience in surface characterization techniques such as AFM, XRR, and XPS. A background in synthetic (in)organic chemistry is highly desirable for modification of the molecular catalyst and surface modification of the inorganic substrates.

Students that fit any of these requirements are encouraged to apply directly to Assist. Prof. Graham de Ruiter (graham@technion.ac.il). Applications should include a CV, a list of grades (M.Sc. or Ph.D.), and a desired starting date. The search will continue until all positions are filled.

Georgia Institute of Technology College of Engineering/GWW School of Mechanical Engineering postdoctoral researcher position available. The postdoctoral researcher is primarily expected to work on developing Kinetic Monte Carlo simulations of the growth and morphology of oxide particles. In addition, the researcher is expected to have knowledge of molecular dynamics and ab initio methods. The selected candidate will work with Dr. Chaitanya Deo at Georgia Institute of Technology on a project funded by Savannah River National Laboratory to develop morphological and physicochemical properties of oxalate and oxide production. The project will provide a better understanding of crystallization and calcination dynamics at plant-scale operating conditions. A multi-scale modeling approach will provide the most accurate description of the crystallization and agglomeration phenomena for the plutonium oxalate precipitation process and of the calcination mechanism.

Applications are available through: <https://apps.itos.uga.edu/ach/position/37937>

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](#), Facebook at [facebook.com/ecolab](#) or LinkedIn at [linkedin.com/company/ecolab](#).

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>