

Chemistry Notices

For the Week of October 31 to November 4, 2011

VISITING SPEAKERS & SEMINARS

DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA

Inorganic and Materials Division Visiting Speaker



Prof. Christine M. Thomas

Professor, Department of Chemistry
Brandeis University
Waltham, MA

will speak on

**"Metal-Metal Multiple Bonds In Early/Late
Heterobimetallics: Small Molecule Activation and
Catalytic Applications"**

The Thomas group has been investigating metal-metal interactions in early/late heterobimetallic complexes as a method for tuning redox potentials and sigma bond activation processes. In a representative complex, $\text{Co}_2(\text{Ph}_3\text{PNHPr})_2\text{Co}$, withdrawal of electron density from Co by the Lewis acidic Zr center leads to a dramatic shift in the two-electron reduction potential to ~ 1 V more positive than observed for a monometallic Co analogue, $\text{Co}(\text{Ph}_3\text{PNHPr})_2$. Moreover, reduced heterobimetallic Co/Zr complexes feature metal-metal multiple bonds that lead to unusual trigonal bipyramidal geometries at both Co and Zr. The reactivity of these highly reduced, coordinatively unsaturated metal-metal multiply-bonded complexes towards the oxidative addition of alkyl halides and the activation of small molecules such as hydrazine, CO_2 , H_2 , and CO will be discussed.

DATE: Monday, 31 October 2011
TIME: 1:00 p.m.
**PLACE: E3-25 Gunning/Lemieux
Chemistry Centre**

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DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA

Joint Physical and Materials Divisions
Visiting Speaker



Dr. Matt Paige

Department of Chemistry
University of Saskatchewan

Western University Exchange
Speakers Program (WUESP)

will speak on

**"Ultrasensitive microscopy and spectroscopy
of chemical systems"**

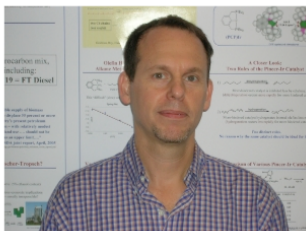
Major advances in physical chemistry are often driven by technical improvements that enable detection and quantification of chemical processes at extremely low concentrations. Of particular interest to my research group have been technical advances in microscopy and spectroscopy, which have made it possible to perform measurements with single-molecule sensitivity and spatial resolution. The general theme of my research program is to use ultrasensitive microscopy and spectroscopy techniques, in combination with more conventional approaches, to explore a range of important chemical systems and problems. In this seminar, I will discuss several applications of ultrasensitive measurements that are ongoing in my research group. Specifically, I will discuss our recent investigations of phase-separation in mixed surfactant monolayer films through a combination of atomic force microscopy, fluorescence microscopy and thermodynamic measurements. A new phase-separated, photopolymerizable monolayer system will also be described. Next, I will report the result from some of our studies of intra- and intermolecular energy transfer in photoexcited systems via single-molecule fluorescence spectroscopy, and finally, the use of ultrasensitive fluorescence microscopy in conjunction with ultrafast spectroscopy for the analysis of a novel photon upconversion scheme will be described.

DATE: Friday, 4 November 2011
TIME: 1:00 p.m.
PLACE: E3-25 Gunning/Lemieux Chemistry Centre

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DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA

**INORGANIC and MATERIALS DIVISION
VISITING SPEAKER**



Alan Goldman

Department of Chemistry and Chemical Biology
Rutgers University, Piscataway, NJ

will speak on

**"Activation of C-H Bonds by Pincer
Iridium Complexes...and then..."**

DATE: Wednesday, 03 November 2011
TIME: 11:00 a.m.
PLACE: E3-25 Gunning/Lemieux Chemistry Centre
Please turn over for Abstract

MC/td (ext: 248-1506); 10/19/11; 4:41 PM

Reshma Singh

502 Seminar

will speak on

**"Application of Photonic
Crystal Enhanced
Fluorescence to Cancer
Biomarker Microarrays"**

Friday, November 4
4:00 – 5:00 p.m. in CCIS L1-140

EMPLOYMENT OPPORTUNITIES



redefine THE POSSIBLE.

Discipline/Field: Materials Chemistry

Home Faculty: Science and Engineering

Home Department: Chemistry

Start Date: July 1, 2012

Affiliation/Union: YUFA

The Department of Chemistry, Faculty of Science and Engineering, invites applications for a tenure-stream appointment at the Assistant or Associate Professor level to commence July 1, 2012, in the area of Materials Chemistry, including but not limited to biomaterials, synthesis and property characterization of advanced materials. Of particular interest would be an individual whose research complements York's existing strengths and interfaces with strategic faculty research areas, in particular environmental science, health sciences, engineering, and energy. Information about the Department and the University can be found at our website: www.chem.yorku.ca.

The successful candidate will have a PhD in Chemistry, post-doctoral experience in a relevant area, an outstanding research record and must be eligible for prompt appointment to the Faculty of Graduate Studies. The successful candidate will be expected to develop an excellent and innovative research program, secure and maintain external peer-reviewed research funding, and to contribute to teaching at the undergraduate and graduate levels.

All York University positions are subject to budgetary approval.

York University is an Affirmative Action Employer. The Affirmative Action Program can be found on York's website at www.yorku.ca/acadjobs or a copy can be obtained by calling the affirmative action office at 416-736-5713. All qualified candidates are encouraged to apply; however, Canadian citizens and Permanent Residents will be given priority.

Applications must be received by **December 15, 2011**. Please mail your curriculum vitae, a detailed research plan, a description of teaching philosophy, summary of research publications, and have three letters of reference sent directly to:

Chair, Search Committee Materials Chemistry, Department of Chemistry
York University, 4700 Keele St., 124 CB
Toronto, Ontario M3J 1P3 Fax: 416-736-5936
E-mail: chemchr@yorku.ca

EMPLOYMENT OPPORTUNITIES, *continued*



UNIVERSITÉ DE
SHERBROOKE

Faculté de médecine et des sciences de la santé
3001, 12^e Avenue Nord
Sherbrooke (Québec)
CANADA J1H 5N4

Éric MARSULT, Ph.D.
Associate Professor
Department of Pharmacology
Telephone: (819) 820.6868 x12433
Fax: (819) 564-5400
E-Mail: Eric.Marsault@USherbrooke.ca

Sherbrooke, October 25, 2011

POSTDOC POSITION

Subject : synthesis of novel antibiotics.

Our group has identified a novel target to fight several multiresistant pathogens, including *C. difficile* and *S. aureus* (Mulhbachet *et al. PLOS Pathogens* **2010**). This very promising target belongs to a new target class involved in the transcriptional control of essential genes. Blockade of the target results in bacterial death, as demonstrated *in bacteria* and *in vivo*.

The project involves the synthesis of heterocyclic analogues of the natural metabolite, testing of biological activity *in vitro* and *in bacteria* with the collaboration of Prs D Lafontaine (Biology), LC Fortier (Microbiology) and R Najmanovich (Bioinformatics).

Desired profile : excellent knowledge of organic synthesis, knowledge of heterocyclic chemistry a plus, proficiency with standard med chem equipment (microwave synthesis, parallel purification, NMR, HPLC, softwares, etc...). Good communication skills and excellent teamwork capabilities.

Location :

Laboratoire de chimie médicinale
Institut de Pharmacologie de Sherbrooke
Université de Sherbrooke

Start date : January 2012

For inquiries, please send CV, research synopsis + 3 letters of recommendation to Dr Éric Marsault (eric.marsault@usherbrooke.ca)

EMPLOYMENT OPPORTUNITIES, *continued*



UNIVERSITY
OF MANITOBA

Department of Chemistry

Assistant Professor in Analytical Chemistry

The Department of Chemistry at the University of Manitoba invites applications for a full-time tenure-track faculty position at the rank of Assistant Professor. This position will be available July 1, 2012. Applicants must have a Ph.D. or equivalent doctoral degree, with relevant postdoctoral experience. The successful applicant will be expected to establish a vigorous externally-funded research program in any area of analytical chemistry and teach at the undergraduate and graduate levels. Candidates specialized in areas (such as separation science) that complement our own strengths are particularly encouraged to apply.

The Department currently has 19 tenured or tenure-track staff, 6 other full-time academic staff, 12 support staff, and over 60 graduate students, post-doctoral fellows, and research associates. The Department has undergone a period of rejuvenation with the appointment of more than 10 new faculty members and about \$20 million in funding for new infrastructure over the past 10 years. We are well equipped for research support in most branches of chemistry with the Manitoba Chemical Analysis Laboratory, service laboratories for NMR (300, 400, 500 and 600 MHz instruments), combination FT-Raman/FT-IR, mass spectrometry (EI, ESI, MALDI and ICP-MS), and materials characterization (ESCA, Auger, powder XRD, SIMS, SEM, SPM; in part via our interdisciplinary Manitoba Institute for Materials). The Faculty of Science has a full-time glassblower and machine and electrical shop facilities. We are in close proximity to national laboratories such as the National Microbiology Laboratory, the Canadian Science Centre for Human and Animal Health, the International Centre for Infectious Diseases, and the NRC Institute for Biondiagnostics.

For further information, see our webpage at: <http://umanitoba.ca/chemistry/>

Culturally diverse and rich in recreational opportunities, Winnipeg combines the amenities of urban life with easy access to the countryside and to northern lakes and forests. Housing prices are attractive by North American standards.

Review of applications will begin December 1, 2011, and will continue until the position is filled. Please refer to position number #13731 in all correspondence. Electronic submissions are encouraged; MS Word or PDF preferred. Applicants should submit a curriculum vitae, a concise research proposal (5 pages, NSERC format preferred), a statement of teaching experience and philosophy, and the names, mailing addresses, telephone numbers and e-mail addresses of three referees, to:

Dr. Peter H.M. Budzelaar
Chair of the Search Committee
Department of Chemistry
University of Manitoba
Winnipeg, MB Canada R3T 2N2

E-mail: acsearch@cc.umanitoba.ca

Telephone: (204) 474-9321

Fax: (204) 474-7608

The University of Manitoba encourages applications from qualified women and men, including members of visible minorities, Aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply, however, Canadians and permanent residents will be given priority. Application materials, including letters of reference, will be handled in accordance with the *Freedom of Information and Protection of Privacy Act* (Manitoba). Please note that CVs may be provided to participating members of the search process.

EMPLOYMENT OPPORTUNITIES, *continued*



UNIVERSITY
OF MANITOBA

Department of Chemistry

Assistant Professor in Inorganic Chemistry

The Department of Chemistry at the University of Manitoba invites applications for a full-time tenure-track faculty position at the rank of Assistant Professor. This position will be available July 1, 2012. Applicants must have a Ph.D. or equivalent doctoral degree, with relevant postdoctoral experience. The successful applicant will be expected to establish a vigorous externally-funded research program in any area of inorganic chemistry and teach at the undergraduate and graduate levels. Candidates specialized in areas (such as bio-inorganic chemistry, inorganic materials or energy-related topics) complementing our own strengths are particularly encouraged to apply.

The Department currently has 19 tenured or tenure-track staff, 6 other full-time academic staff, 12 support staff, and over 60 graduate students, post-doctoral fellows, and research associates. The Department has undergone a period of rejuvenation with the appointment of more than 10 new faculty members and about \$20 million in funding for new infrastructure over the past 10 years. We are well equipped for research support in most branches of chemistry, including a full-time glassblower and service laboratories for NMR (300, 400, 500 and 600 MHz instruments), combination FT-Raman/FT-IR spectrophotometer, mass spectrometry (EI, ESI, MALDI and ICP-MS), and materials characterization (ESCA, Auger, powder XRD, SIMS, SEM, SPM; in part via our interdisciplinary Manitoba Institute for Materials). We are in close proximity to national laboratories such as the National Microbiology Laboratory, the Canadian Science Centre for Human and Animal Health, the International Centre for Infectious Diseases, and the NRC Institute for Biodiagnostics.

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Review of applications will begin December 1, 2011, and will continue until the position is filled. Please refer to position number #13735 in all correspondence. Electronic submissions are encouraged; MS Word or PDF preferred. Applicants should submit a curriculum vitae, a concise research proposal (5 pages, NSERC format preferred), a statement of teaching experience and philosophy, and the names, mailing addresses, telephone numbers and e-mail addresses of three referees, to:

Dr. Peter H.M. Budzelaar
Chair of the Search Committee
Department of Chemistry
University of Manitoba
Winnipeg, MB Canada R3T 2N2

E-mail: icsearch@cc.umanitoba.ca

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OTHER OPPORTUNITIES

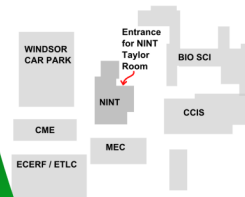
November 4th @ 12:00 pm NINT Taylor Room

Engineering the Material Interface in Nano-electronics

SMALLtalk  **U of A nano**
A monthly seminar, organized by the UofA Nanotechnology Group University of Alberta Nanotechnology Group

Refreshments will be provided.

The NINT Taylor Room is publicly accessible via the East entrance of NINT.



For details & directions: nanogroup.ece.ualberta.ca



Prof. Douglas Barlage

Associate Professor, Director of Engineering Physics
Department of Electrical and Computer Engineering

Meaningful electronic devices invariably contain at least one if not several interfaces; the engineering of these structures requires a merging of material science, physics, & electrical engineering. The science of constructing these interfaces, while not new, is just getting started as at the nanoscale, and the engineering of nanoscale devices requires understanding of both manufacturing and properties of these interfaces. New opportunities arise as devices constructed of materials that should be incapable of being used together can now be realized at the nanoscale. We will examine the challenges and opportunities that a rethinking of the electrical properties of the material interface will bring about over the next several years and how it can be utilized in optical and electrical devices.

This event has received generous support from:



National Research Council Canada
National Institute for Nanotechnology

Conseil national de recherches Canada
Institut national de nanotechnologie



2nd Annual WISEST Lectureship

Women Leaders

in Science & Engineering:

Why So Few?

Dr. Elizabeth Cannon, P.Eng.

President & Vice-Chancellor
University of Calgary

Thursday, November 1, 2011

5:30 pm – Networking Reception

6:30 pm – Lecture

TELUS Centre, University of Alberta

RSVP at www.wisest.ualberta.ca

