

# Chemistry Notices

For the Week of March 7 to March 11, 2011

## VISITING SPEAKERS & SEMINARS

DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA

### INORGANIC DIVISION VISITING SPEAKER

#### Professor Michael D. Fryzuk

Department of Chemistry  
University of British Columbia  
Vancouver, BC



will speak on

#### "Organometallic Approaches to Dinitrogen Activation"

DATE: Monday, 7 March 2011  
TIME: 11:00 a.m.  
PLACE: E3-25 Gunning/Lemieux Chemistry Centre

DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA

### Physical Division Visiting Speaker



#### Dr. R. Scott Murphy

Department of Chemistry  
University of Regina

Western University Exchange  
Speakers Program (WUESP)

will speak on

#### " Photoresponsive Liposomes: Developing Photochromic Membrane Disruptors "

We are developing functional liposomes whose membrane stability will be reversibly photocontrolled. By incorporating photochromic compounds that contain elements of lipid complementarity into the bilayer lipid membrane (BLM) of large unilamellar vesicles (LUVs), we expect that the photoisomerization of these molecules will disrupt the local lipid order. The reversibility of these photochromic membrane disruptors will allow for repeated disruption that may alter membrane permeability. As a result, these photoresponsive liposomes would have applications in photoregulated drug delivery where the delivered dosage could be released in a pulsatile manner. For photochromic compounds that do not produce sufficiently permeable membranes, we are examining their ability to photoinduce membrane fusion between LUVs and/or local changes in lipid phase. New photochromic compounds belonging to the diethylenethane and spirooxazine families with aspects of lipid complementarity have been synthesized and their incorporation in the BLM of LUVs has been examined. Fluorescence spectroscopy and fluorescence correlation spectroscopy have been used to monitor the effect of photoisomerization on membrane permeability and membrane fusion, respectively. I will present our most recent developments regarding the functionality of these photoresponsive liposomes.

DATE: **Monday, 7 March 2011**  
TIME: **1:00 p.m.**  
PLACE: **E3-25 Gunning/Lemieux Chemistry Centre**

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## Departmental Colloquium

Department of Chemistry, University of Alberta  
Hosted by the Inorganic Division



### Dr. Greg Scholes

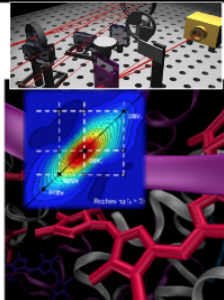
Professor, Department of Chemistry, and  
Director, Centre for Quantum Information  
and Quantum Control, University of Toronto  
Senior Editor, *J. Phys. Chem*

#### Do algae really use quantum mechanics to harvest light for photosynthesis?

Light-harvesting in photosynthesis involves amplification and regulation of light capture by reaction centers using energy transfer from antenna proteins. Efficient energy transfer among specialized antenna proteins enables organisms to adapt to local solar spectra (e.g. at various depths in the ocean) and to function even under quite low light fluxes. The key biophysical processes at play have been discovered by investigating electronic energy transfer in a variety of photosynthetic proteins. A new twist on this old problem is suggested by recent research that provides evidence that these dynamics can involve quantum-coherence, even at ambient temperature conditions. Our experiments, using two-dimensional photon echo spectroscopy, have revealed that in light-harvesting antenna proteins isolated from a family of marine cryptophyte algae, quantum-coherence effectively 'wires' together the light-absorbing molecules in order to facilitate efficient long-range energy transfer. The talk will introduce electronic energy transfer, report new developments in experimental probes and theoretical studies of energy transfer mechanisms, and will debate how quantum-coherence could be relevant to biological function.

[1] E. Collini, C. Y. Wong, K. E. Wilk, P. M. G. Curmi, P. Brumer, and G. D. Scholes, "Coherently wired light-harvesting in photosynthetic marine algae at ambient temperature" *Nature* 463, 644-648 (2010).

FRIDAY, MARCH 11, 2011, 3:15 PM, E1-60



# EMPLOYMENT OPPORTUNITIES

Vancouver Island University's Department of Chemistry is looking for a dynamic individual for a Chemistry Instructor position in the Faculty of Science and Technology (Nanaimo). This is a temporary faculty appointment for the 2011-2012 academic year, subject to funding and enrolment. The position is Temporary Part-time (up to full-time course load) from August 15, 2011 – May 18, 2012. The candidate will be expected to teach first-year general chemistry courses, and instruct first-year chemistry labs and second-year organic chemistry labs as needed.

Candidates must demonstrate commitment to teaching, learning, and student success through scholarship and institutional service. Successful candidates will participate in a wide range of activities outside the classroom, including student support; institutional, faculty and departmental committee meetings and other initiatives; and professional activities in keeping with their disciplines in and outside the institution. A Ph.D. in Chemistry from an appropriately accredited institution is required; recent relevant teaching experience is preferred.

Applicants are invited to submit a letter of application; a Curriculum Vitae; copies of recent teaching evaluations, if available; and names and contact information of three referees. Short-listed candidates must provide original transcripts, or applicable original certifications at time of interview. The posting period is February 17, 2011 - April 13, 2011.

**The University of Victoria's** Department of Chemistry is seeking an energetic and enthusiastic Senior Scientific Assistant (SSA) to manage and operate the Department's Nuclear Magnetic Resonance facility. The successful candidate will have an M.Sc. or PhD in chemistry or a closely related discipline; or an equivalent combination of education and experience. A strong background in NMR is essential. Managerial experience and excellent communications skills are essential. Teaching experience is an asset. To apply for this position, please visit: <https://uhire.uvic.ca>

**The University of Guelph** Hydrothermal Chemistry Group is currently accepting applications for both M.Sc. and Ph.D. positions for Fall 2011.

Applicants should have a strong background in physical chemistry, analytical chemistry or chemical physics and a solid record of academic performance. Students with strong backgrounds in experimental geochemistry or chemical engineering will also be considered.

To contact Professor Peter Tremaine or learn more about the group, please visit <http://tremaine.cs.uoguelph.ca>.

**The Institut des Sciences de la Mer de Rimouski (ISMER) (Quebec)**, is looking for a candidate to fill a regular faculty position in chemical oceanography specialized in inorganic chemistry. This position is aimed at a chemist with expertise in the study of estuaries and coastal marine systems as well as marine biogeochemistry, stable isotopes used as tracers or marine environmental nanochemistry.

The working language is French.

## EMPLOYMENT OPPORTUNITIES, *continued*

The candidate must have a Ph.D. in chemical oceanography, or in marine geochemistry, marine environmental chemistry, marine analytical chemistry and specialized in marine inorganic chemistry. Candidates must provide either by email ([Presid-assemblee\\_ism@uqar.qc.ca](mailto:Presid-assemblee_ism@uqar.qc.ca)) or mail, a curriculum vitae, a description of their proposed research activities for the five next years and teaching capabilities and the contact information of three referees. Review of applications will begin on April 15, 2011 and continue until the position is filled.

Président de l'Assemblée institutionnelle  
Institut des sciences de la mer de Rimouski (ISMER)  
310, allée des Ursulines, C.P. 3300  
Rimouski (Quebec) G5L 3A1

**The University of Winnipeg's Department of Chemistry** invites applications for 2 positions:

- (1) Biochemistry laboratory instructor. Duties will include coordinating the biochemistry lab program; instructing student laboratories in biochemistry; and other duties as assigned by the Chair. The successful candidate is expected to have a postgraduate degree (M.Sc. and/or Ph.D.) in Biochemistry, and to have teaching experience. The review of applications will begin on March 14. Subject to budgetary approval, the position will start July 1, 2011. Applicants should submit a *curriculum vitae* and a statement of teaching experience and interests, and arrange for three letters of recommendation to arrive by March 14.
- (2) Tenure-track position at the Assistant Professor level. While outstanding candidates in all areas are encouraged to apply, specialization in Inorganic Chemistry will be an advantage. Candidates should have a Ph.D. degree (postdoctoral experience preferred), proven research ability, and a strong commitment to teaching. The successful candidate is expected to develop a strong, externally-funded research program, involving students at both the undergraduate and graduate levels, and to contribute to teaching at the undergraduate level, including in their area(s) of expertise. Consideration of applications will begin on March 14, 2011 and will continue until the position is filled. Subject to budgetary approval, this position will commence on July 1, 2011. Applicants should submit a *curriculum vitae*, a research proposal, a statement of teaching experience and interests, and arrange for three letters of recommendation to arrive by March 14.

For further information on these positions, please see the Department's website at <http://chemistry.uwinnipeg.ca>. Inquiries and applications for both positions should be directed to:

Dr. Désirée Vanderwel  
Chair, Department of Chemistry  
The University of Winnipeg  
515 Portage Avenue Winnipeg, MB, Canada R3B 2E9  
Phone: (204)789-1483; Fax: (204) 775-2114 Email: [d.vanderwel@uwinnipeg.ca](mailto:d.vanderwel@uwinnipeg.ca).

Applications and letters of reference may be submitted electronically.

## EMPLOYMENT OPPORTUNITIES, *continued*

**The Department of Chemistry at Dalhousie University** invites applications for a Limited Term Appointment (July 2011 to June 2014) at the rank of Instructor. Duties will include delivery of classroom instruction in introductory chemistry, including teaching and teaching related activities, advising and counselling of students, interacting with other faculty involved in the first-year program, maintaining resource materials, including on-line material, invigilating tests and exams, and preparation of class information sheets and other common material.

The position requires a minimum of a Ph.D. degree in Chemistry or equivalent. Some teaching experience would be an asset. Applications should consist of a curriculum vitae, teaching dossier and three reference letters sent by separate cover. The completed application should be sent **before February 22, 2011** to:

Dr. Neil Burford, Chair  
Department of Chemistry, Dalhousie University  
Halifax, NS B3H 4J3  
Tel: 902-494-3707 Fax: 902-494-1310

# OTHER OPPORTUNITIES

## Call for Exhibits/Volunteers for Science Rendezvous Edmonton 2011

2011 is the International Year of Chemistry. The Chemical Institute of Canada and TELUS World of Science would like to establish **Science Rendezvous Edmonton 2011** as the inaugural one-day festival style celebration of chemistry and science at TELUS World of Science (TWOS) for all the public. **Science Rendezvous Edmonton 2011** runs from 10:00 a.m. to 4:00 p.m. on Saturday May 7. Consider exhibiting and help the public celebrate Science with us!

### Who are you (in groups of 1-6 ...ideally 4)?

You are a group of people who might have: a few good hands on kitchen/household science or chemistry experiments/demonstrations that you'd like to show to folks of all ages.

You might be a college or university professor/ teacher/researcher/graduate student doing, or directing, research/work of import that you wish to show the general public.

You could be someone who will dress up and take on the persona of, a famous scientist (Einstein, Newton, Curie, Rutherford, Dalton, Priestly, Lavoisier, etc) for the day at TWOS.

You could be a drama student, or drama group, willing to perform a short scene/excerpt from a play featuring a scientist or scientists (Hoffman and Djerasi's *Oxygen*, Capek's *R.U.R.*, Brecht's *Galileo*, Durenmatt's *The Physicists*, Kipphardt's *In the Matter of J. Robert Oppenheimer*, Stoppard's *Arcadia*, Andreyev's *To the Stars*, Maxim Gorky's *Children of the Sun*, and countless other suitable plays) – potentially in the foyer of TWOS.

A group of high school students, with their teacher willing, to demonstrate some research they've done or with exciting chemistry demonstrations to share.

A group of high school teachers demonstrating some exciting chemistry demonstrations they'd like to share.

A chemistry winner/finalist of the Regional Science fair contest.

An Association of local professionals (forensic scientists, fireman, EMTs, etc) who have a science demonstration the public just has to see.

Other relevant interested science group or company (...selling science not your services)

### How long do you have to exhibit?

In shifts your group will man a table continuously from 10:00 am to 4:00 p.m. on May 7th, 2011. The precise location of your (8×4) table in TWOS will be determined at a later date.

### What does each group member get for your volunteer labour?

The undying thanks of the organizing committee and a CIC Edmonton Volunteer T-shirt.

### How do you apply to participate in Science Rendezvous Edmonton 2011?

You must email the following information to Ian Phillips ([ian.phillips@epsb.ca](mailto:ian.phillips@epsb.ca))

**Your Name:** \_\_\_\_\_

**Your Address:** \_\_\_\_\_

**Your Group's name:** \_\_\_\_\_

**Your Organization's name:** \_\_\_\_\_

**Your Group Members' names:** \_\_\_\_\_

**Your Activity:** (Describe your exhibit in no more than 100 words)

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## OTHER OPPORTUNITIES, *continued*

There are currently only 30 spots available. Depending on the numbers and variety of entries for Science Rendezvous Edmonton 2011, there is no guarantee that your proposal will be accepted. Informal auditions at a yet to be chosen location (TBA) may be necessary to arrive at the final roster of participants. A call for volunteers is under consideration as of this writing.

Do not hesitate to telephone me at 780-448-5000 to talk to me in person if you need some clarification. I look forward to working with you in Science Rendezvous Edmonton 2011,

Dr. Ian G. Phillips (Teacher Ross Sheppard High school).