

# Chemistry Notices

For the Week of April 25 to April 29, 2011

## VISITING SPEAKERS & SEMINARS

DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ALBERTA  
Inorganic Division Visiting Speaker



**Dr. Stephanie Brock**  
Professor, Department of Chemistry  
Wayne State University  
Detroit, MI  
will speak on

**"The Role of Synthetic Levers for Control of Phase, Size and Morphology in Nanoscale Transition Metal Pnictides: Consequences for Magnetic and Catalytic Properties"**

The transition metal pnictides (pnictogen = Group 15 element) are a class of compounds that have yet to be extensively explored on the nanoscale, despite the fact that these materials exhibit a wide range of properties of interest for important technologies including thermoelectrics, batteries, data storage, and catalysis. A major challenge for understanding the properties of these phases is the lack of synthetic methods that permit formation of discrete nanoparticles with control of size, structure, stoichiometry and morphology. We have developed a number of synthetic "levers" that enable us to control these critical parameters in first-row transition metal phosphides and arsenides, and have begun to map out the role of size on structure-property relationships, with particular emphasis on magnetic and catalytic properties.

The presentation will focus on two phosphide cases, Fe-P (Fe<sub>2</sub>P vs. FeP) and Ni-P (Ni<sub>3</sub>P<sub>2</sub> vs. Ni<sub>2</sub>P), and one arsenide case, MnAs (hexagonal vs. monoclinic). The mechanism by which phase and size is controlled in these systems will be described, and the consequences for magnetic exchange in Fe-P and MnAs, and the hydrodesulfurization catalytic properties of Ni-P, presented. The talk will conclude with a discussion of the potential generality of the synthetic "levers" uncovered and the promise of nanostructured pnictide phases for addressing critical technological needs in the 21<sup>st</sup> century.

**DATE:** Friday, 29 April 2011  
**TIME:** 1:00 p.m.  
**PLACE:** E3-25 Gunning/Lemieux Chemistry Centre

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## EMPLOYMENT OPPORTUNITIES

The Government of Canada has a 6-month position opening up at CanmetENERGY in Devon: [http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/about\\_us/devon.html](http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/about_us/devon.html). The position is a post-secondary internship (AB-PS-R60) which now appears on the Program Web site (<http://www.yip.gc.ca> (<http://www.yip.gc.ca/>)).

Patricia Arboleda, MSc

Chemist | Chimiste

CanmetENERGY | CanmetÉNERGIE

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[www.canmetenergy.nrcan.gc.ca](http://www.canmetenergy.nrcan.gc.ca) ( <http://www.canmetenergy.nrcan.gc.ca/> ) |

[www.canmetenergie.nrcan.gc.ca](http://www.canmetenergie.nrcan.gc.ca) ( <http://www.canmetenergie.nrcan.gc.ca/> )

## EMPLOYMENT OPPORTUNITIES, *continued*

**novaNAIT** has a Summer– Research Student position available. This position is jointly supported by STEP funding and novaNAIT. It is for the time period of May 2nd to June. 25th, 2011 and it involves working closely with a team of researchers who are committed to discover new frontiers analyzing surface properties of solid materials using a variety of instruments and techniques. The successful candidate must have excellent analytical chemistry techniques and be interested in instrumentation and design. Significant part of the project involves working on the newly developed instrument for measuring surface area (S.A.) of solid materials. The results obtained from this instrument will be cross examined for accuracy and precision against check standards and/or data obtained using commercially available instruments. The successful candidate must be able to write detailed reports and communicate with others very well. The student must be a self-learner and be able to conduct experiments with minimum amount of supervision.

Qualifications:

- Must be a student and not graduating this year
- Good academic standing
- Good command of English for writing reports and making presentations
- Excellent knowledge of Microsoft Word, Excel and Power Point software.
- Handy with instruments. Previous knowledge of electronics, mechanical and vacuum systems would be an asset.

Remuneration: \$12.50 per hour. Closing Date: Until a suitable candidate is found. Please submit a cover letter and resume with name of two references to: Dr. Nima Fatemi via email, [nimaf@nait.ca](mailto:nimaf@nait.ca)

## OTHER OPPORTUNITIES

WISER is excited to invite you for a workshop on transitions. Dr. Margaret Ann Armour will be discussing various transitions that women can face at different points in their careers. Including: transitioning from graduate student to workforce, transitioning from mother back to the work force, and even changing careers. Food will be provided for attendees.

**When:** Thursday, April 28; 5:00 – 8:00pm

**Where:** TELUS Centre, (Room 236/238), University of Alberta North Campus

**Cost:** \$5 (payable at the door)

**RSVP:** By April 26 (on the Events page at [www.wisest.ualberta.ca](http://www.wisest.ualberta.ca))

Food will be provided for attendees who RSVP in advance.

*\*WISER activities support diversity in the workplace and encourage the participation of both men and women.\**

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### PDF Research Day

On May 11 (1:00 – 5:00pm) the Postdoctoral Fellows Association and Postdoctoral Fellows Office are hosting a PDF Research Day at the TIMM's Centre (112<sup>th</sup> Street and 87<sup>th</sup> Avenue). Come join us as VP Research, Dr. Lorne Babiuk kicks off an afternoon of speed talks and poster presentations from postdoctoral fellows representing departments across the University of Alberta.

## OTHER OPPORTUNITIES, *continued*

For competing PDFs there will be fantastic **PRIZES** (Grand prize - Earl's tasting dinner for 8, a \$300 value + \$300 cash awarded for the best over-all, and for both poster presentations and speed talks: first - \$300, second - \$200, and third - \$100). For those not presenting there will be refreshments and light snacks provided and some excellent door prizes from Edmonton businesses.

If you are a PDF and interested in presenting your work for these fantastic prizes there are still spots for posters and 3 minute speed talks. **Please email Cathy Cullingham ([cathy.cullingham@ualberta.ca](mailto:cathy.cullingham@ualberta.ca)) for additional information, registration closes April 29<sup>th</sup>.**

If you are a member of the campus community and would like to attend this event, or participate as a judge, please email Cathy Cullingham ([cathy.cullingham@ualberta.ca](mailto:cathy.cullingham@ualberta.ca)).

This event is partially sponsored by the University Hospital Foundation, the Faculty of Medicine and Dentistry, and the Faculty of Science.

We hope to see you there!

The PDFA

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The **Alberta Center for Surface Engineering and Science (ACSES)** will again be hosting a two-day course on *Practical Surface Analysis*. It includes a short presentation followed by demo/training for XPS, ToF SIMS, AES, and EDS. Details can be found on our website: [www.ualberta.ca/ACSES](http://www.ualberta.ca/ACSES)

The spring term course is open to all graduate students, PDF's, and faculty members of the Chemistry Department, but space is very limited and will be filled on a first come first serve basis. If you are interested in taking the course, please submit a registration form from the website and an indent for \$100 (covers two lunches and refreshments) to Laura Pham in room E3-44 not later than Thursday, April 28th.

**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.

## OTHER OPPORTUNITIES, *continued*

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)

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).