



GRADUATE STUDENT POSITIONS (MSc or PhD)

Department of Chemistry & Biochemistry

University of Lethbridge

Hayes Research Group

<http://people.uleth.ca/~p.hayes/>

Inorganic/Organometallic Chemistry

Research Description:

Available projects in the Hayes group involve the synthesis of inorganic molecules for application in new chemical transformations and catalysis. Three unique projects address this goal. The first project tackles the challenge of preparing new materials that are both biodegradable and biocompatible through the use of discrete Mg, Ca, and Zn complexes. A second research direction involves the preparation of new ligand systems, including monoanionic pincers and those that contain the little-known phosphazide functionality, to support new and unusual rare earth and actinide complexes. The final project is tailored toward using late transition metals (*e.g.* Rh, Ir) for the catalytic functionalization of hydrocarbons and small molecule activation.

About Lethbridge:

Lethbridge is the largest city in southern Alberta, Canada, populated by about 105,000 people. It is favourably situated within driving distance of many attractive destinations, including: the Rocky Mountains (1 hour), Waterton Lakes National Park (1.25 hours), the cities of Calgary (2 hours) and Edmonton (5 hours), and ski resorts, including Castle Mountain (1.5 hours), Fernie, BC (2.5 hours), and Whitefish, Montana, USA (3.5 hours). You can even reach wine country in beautiful Okanagan Valley, BC in 8 hours.

Required Skills:

- Ideal candidates are motivated, independent and creative researchers looking for a stimulating environment to develop skills and experience relating to homogenous organometallic catalysis.
- Working knowledge of air sensitive chemical manipulation (Schlenk, glove box, etc.)
- Expertise in routine characterization techniques (NMR, IR, GC-MS, etc.)
- Expertise in X-ray crystallography and/or gel permeation chromatography a significant asset
- Excellent communication skills
- Minimum English Language Proficiency score of (within last 2 years):
 - TOEFL (paper-based) – 580 and a TWE (Test of Written English score of 5.0) OR
 - iBT TOEFL (computer-based) – 93 OR
 - IELTS – 6.5 with no band below 5.5

Required Degree Prerequisites:

- For entry into M.Sc.: B.Sc. in Chemistry
- For entry into Ph.D.: M.Sc. in Inorganic (preferred) or Organic Chemistry

Financial Support (Stipend):

- If Grade Point Average (GPA) on last 20 courses (or all M.Sc. courses) is ≥ 3.7 (A-): \$23,000 CAD/year (+ full tuition scholarship)
- If Grade Point Average (GPA) on last 20 courses (or all M.Sc. courses) is 3.5–3.69: \$15,000 CAD/year (+ full tuition scholarship)
- No income taxes on stipends

Deadlines:

- January 1 start date: October 1
- May 1 start date: February 1
- September 1 start date: Round 1 - February 1; Round 2 - May 1

Additional Information:

- Please visit: <http://people.uleth.ca/~p.hayes/>

How to Apply:

- Send an email with a current curriculum vitae and contact information for at least two academic references to p.hayes@uleth.ca.

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