

第 733 回 化学・物質工学セミナー

下記のとおりセミナーを開催致します。万障お繰り合わせの上、ご参加下さい。

第 733 回例会

記 日時:令和 5 年 8 月 16 日(水) 14:30-16:00

形式:対面

場所:工学部 4 番講義室 (工学部 1 号館 2 階)

講師: Prof. Paul G. Hayes

(Department of Chemistry&Biochemistry, University of Lethbridge, Canada)

演題: 「Rhodium Mediated Dehydrogenation of Main Group Compounds」

Paul G. Hayes 先生は、RSC Advances の Associate Editor を務められており、有機金属化学、錯体化学の分野で非常に高名な先生です。Ca、Mg、Zn 等の金属含有生体関連物質の創製をはじめ、遷移金属錯体を用いた合成化学反応の開発に関わる研究を精力的に行っております。今回のセミナーでは、Rh 等の遷移金属触媒作用による脱水素型反応に関する研究についてご発表頂きます。

ご参加のほど、どうぞ宜しくお願い致します。

第 733 回セミナー世話人

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EMPLOYMENT RECORD

2023 Specially Appointed Professor (July – August), Hokkaido University, Sapporo, Japan
2022-present Chair, Department of Chemistry and Biochemistry, University of Lethbridge, Canada.
2021 Visiting Professor (April – September), Nagoya University, Nagoya, Japan.
2019-present Tier I Board of Governors Research Chair in Organometallic Chemistry
University of Lethbridge, Canada.
2018 Visiting Professor of Canadian Studies, Hokkai-Gakuen University, Sapporo, Japan.
2015-present Associate Editor, *RSC Advances*, Royal Society of Chemistry, Cambridge, UK.
2015-present Professor, University of Lethbridge, Canada.
2014 Visiting Associate Professor, RWTH Aachen University, Aachen, Germany.
2010-2015 Associate Professor, University of Lethbridge, Canada.
2006-2010 Assistant Professor, University of Lethbridge, Canada.

EDUCATION & TRAINING

2004-2006 NSERC Postdoctoral Fellowship, University of California, Berkeley, Berkeley, USA
Supervisor: Prof. T. Don Tilley
1999-2004 Ph.D. in Synthetic Organometallic Chemistry, University of Calgary, Canada.
Supervisor: Prof. Warren E. Piers
1995-1999 B.Sc. (Honours) in Chemistry, Mount Allison University, Canada
Supervisor: Prof. Stephan A. Westcott

AWARDS

2021 JSPS Invitational Fellowship (Long-term) for Research in Japan
2020 University of Lethbridge Study Leave (Competitive Sabbatical Leave)
2019 Tier I Board of Governors Research Chair in Organometallic Chemistry
2016 Fellow of the Royal Society of Chemistry
2014 University of Lethbridge Study Leave (Competitive Sabbatical Leave)
2010 Confederation of Alberta Faculty Associations Distinguished Academic Early Career Award
2009-2012 Alberta Ingenuity New Faculty Award
2005 University of Calgary NSERC Doctoral Nomination (Physical Sciences Candidate)
2005 University of Calgary Dissertation Award Nomination (Chemistry Candidate)
2004-2006 Natural Sciences and Engineering Research Council of Canada Postdoctoral Fellowship
2003 University of Calgary J. B. Hyne Research Innovation Award
2002-2003 Alberta Heritage Ralph Steinhauer Award of Distinction
2002-2004 Honorary Sir Izaak Walton Killam Memorial Doctoral Scholarship
2002 Dean's Research Excellence Award
2000-2004 NSERC of Canada Postgraduate Scholarships (A & B)
1998 NSERC of Canada Undergraduate Research Scholarship Award

EXTERNAL FUNDING

Secured >\$1,850,000 CAD in external funding for independent research program and >\$2,500,000 CAD in additional collaborative funding for major equipment. (Total funding >\$4,350,000 CAD)

SELECTED PUBLICATIONS (From a total of >65 papers in referred journals, 4 patents, 4 book chapters; >3000 citations; H-index = 28)

- Dickie, T. K. K.; Hayes, P. G. "Thorium(IV) Diphosphazide Complexes: CO₂ Insertion into Th–C and Th–N Bonds" *Organometallics* **2022**, *41*, 278-283.
- MacNeil, C. S.; Hsiang, S.-J.; Hayes, P. G. "Reversible Dehydrogenation of Primary Aryl Boranes" *Chem. Commun.* **2020**, *56*, 12323-12326. (Featured on Front Cover of Journal)
- Dickie, T. K. K.; MacNeil, C. S.; Hayes, P. G. "Consecutive N₂ Loss from a Uranium Diphosphazide Complex" *Dalton Trans.* **2020**, *49*, 578-582. (Featured on Back Cover of Journal)
- MacNeil, C. S.; Glynn, K. E.; Hayes, P. G. "An H-Substituted Rhodium Silylene Complex" *Chem – Eur. J.* **2019**, *25*, 8203-8207. (Featured on Journal Frontispiece and Selected as a "Hot Paper")
- Hänninen, M. M.; Zamora, M. T.; MacNeil, C. S.; Knott, J. P.; Hayes, P. G. "Elucidation of the Resting State of a Rhodium NNN-Pincer Hydrogenation Catalyst that Features A Remarkably Upfield Hydride ¹H NMR Chemical Shift" *Chem. Commun.* **2016**, *52*, 586-589.
- Hayes, P. G.; Xu, Z.; Beddie, C.; Keith, J. M.; Hall, M. B.; Tilley, T. D. "The Osmium–Silicon Triple Bond: Synthesis, Characterization and Reactivity of an Osmium Silylyne Complex" *J. Am. Chem. Soc.* **2013**, *135*, 11780-11783.
- Johnson, K. R. D.; Hannon, M. A.; Ritch, J. S.; Hayes, P. G. "Thermally stable rare earth dialkyl complexes supported by a novel bis(phosphinimine)pyrrole ligand" *Dalton Trans.* **2012**, *41*, 7873-7875. (Invited Submission in Special "New Talent Americas" Issue)
- Wheaton, C. A.; Hayes, P. G. "Cationic Zinc Complexes: A New Class of Catalyst for Living Lactide Polymerization at Ambient Temperature" *Chem. Commun.* **2010**, *46*, 8404-8406.
- Hayes, P. G.; Gribble, C. W.; Waterman, R. Tilley, T. D. "A Hydrogen-Substituted Osmium Stannylene Complex: Isomerization to a Metallostannylene Complex via an Unusual α-Hydrogen Migration From Tin to Osmium" *J. Am. Chem. Soc.* **2009**, *131*, 4606-4607.
- Hayes, P. G.; Beddie, C.; Hall, M. B.; Tilley, T. D. "H-Substituted Osmium Silylene Complexes: Effect of Charge Localization on Catalytic Hydrosilylation" *J. Am. Chem. Soc.* **2006**, *128*, 428-429.
- Hayes, P. G.; Piers, W. E.; Parvez, M. "Cationic Organoscandium β-Diketiminato Chemistry: Arene Exchange in Solvent Separated Ion Pairs" *J. Am. Chem. Soc.* **2003**, *125*, 5622-5623.
- Hayes, P. G.; Piers, W. E.; McDonald, R. "Cationic Scandium Methyl Complexes Supported by a β-Diketiminato ("Nacnac") Ligand Framework" *J. Am. Chem. Soc.* **2002**, *124*, 2132-2133.

SELECTED INVITED PRESENTATIONS (From >125 from independent career)

Conferences: 2022 Catalysis Society of South Africa (**Keynote Lecture**), 7th Latin American Symposium on Coordination and Organometallic Chemistry (**Keynote Lecture**; 2019, Colombia), 7th Asian Conference on Coordination Chemistry (2019, Malaysia), International Conference on Polymers and Advanced Materials (2013, 2017, 2019, 2022 Mexico), The 235th, 247th and 249th ACS National Meetings (2010, 2014, 2015, USA), Pacificchem 2015, 1st and 2nd International Symposia on Polymer Ecomaterials (2012, 2014, China), A/BC Inorganic Discussion Weekend (**Plenary Lecture**; 2009, Canada).

University, Government: Nagoya University, Kyoto University, University of Tokyo, Tohoku University, RIKEN, Shanghai Institute of Organic Chemistry, Henan University, Inner Mongolia University of Technology, University of Oxford, RWTH Aachen University, Trinity College Dublin, Lund University, University of St. Andrew's, University of California, Berkeley, University of Southern California, University of Texas at Austin, Universidad Nacional Autónoma de México, University of British Columbia, Queen's University, Dalhousie University, Université de Montréal, University of Alberta

SELECTED ACADEMIC ACTIVITIES

- 2022-2024 Director of Subject Divisions, Canadian Society for Chemistry
- 2019-2022 Technical Program Co-Chair for 105th Canadian Chemistry Conference and Exhibition in Calgary, Alberta, Canada (June 2022)
- 2019-2022 Member of External Advisory Committee for the Canada Foundation for Innovation (CFI)
- 2014-2015 Corresponding organizer of "Metal Mediated Polymerization" Symposium for Pacificchem 2015 in Honolulu, Hawaii, USA (December, 2015)
- 2012 Co-Organizer of "Metal Mediated Polymerization" Symposium for the 95th Canadian Society for Chemistry Conference in Calgary, Alberta, Canada (May, 2012)
- 2012, 2016 Member (elected) of University of Lethbridge Graduate Council Executive
- 2009-2020 Graduate Studies Coordinator for University of Lethbridge Department of Chemistry