1st Green Chemistry Symposium
July 17-18, 2018
Montréal, Qc, Canada
Thank You!

For contributing to the success of the 1\textsuperscript{st} Green Chemistry Symposium

Organizing Committee:

Prof. André Charette, Université de Montréal
Ms. Jing Chen, NSFC
Ms. Vanessa Kairouz, Université de Montréal
Prof. Chao-Jun Li, McGill University
Ms. Laurence Martin-Gosselin, FRQNT
Ms. Edith Salifou, McGill University
Ms. Jennylee Tupper, FRQNT

Special thanks to all our volunteers
On behalf of the National Natural Science Foundation of China (NSFC), we warmly welcome you to participate in the 1st Green Chemistry Symposium. This symposium is one of a series of symposiums jointly organized between NSFC and its long-time Quebec partner FRQNT and the first of its kind on the topic of Green Chemistry. We are pleased to have invited 21 Chinese scientists who have done great research and have strong interest to collaborate with their Quebec peers in this field. We hope you will enjoy the symposium and establish new contacts and continue to expand your network.

The Fond de Recherche du Québec – Nature et Technologie (FRQNT) is honored to co-host with the help of the Centre en chimie verte et catalyse, the first Green Chemistry Symposium here in Montreal. We hope you will find links between your research on green chemistry and the projects research that are being done in Québec. For us, the Symposium means to be the occasion to learn, to teach, to observe, and to create new relationships within the international scientific community. We hope you will have a great stay and an excellent experience in this year’s Green Chemistry Symposium.

We are pleased to warmly welcome you to the 1st Green Chemistry Symposium in collaboration with FRQNT and NSFC. We are convinced that the scientific exchanges will not only be highly stimulating but they will also generate new and creative ideas. We particularly welcome participant from overseas and we are convinced that new links and friendship will be created. We hope that this symposium will be the beginning of a new tradition that will promote interactions between the FRQNT Center in Green Chemistry and Catalysis and our scientific colleagues in China.

Over the course of the next two days, we are convinced that you will be able to appreciate not only the campuses of the Université de Montréal and of McGill University but also to discover how vibrant the city of Montreal is. We are proud of the scientific and social program we have built up and we are sure that you will enjoy every minute of it.
REGISTRATION
Registration will take place from 8 am to 9 am on July 17, 2018 at the Roger Gaudry Building, next to the Auditorium Room M-425. All attendees must wear their name badge on site at all times.

VENUES
Lectures will be presented in the Auditorium Room M-425, located on the 4nd floor of the Roger Gaudry Building at Université de Montréal. The poster sessions will be held in the great hall adjacent to the Auditorium Room M-425.

MEALS
Breakfasts, lunches and refreshment breaks will be provided.

PHOTO TAKING
To keep a souvenir of your visit, a group picture has been scheduled on July 18, 2018 right before lunch (around 12:00 pm). Please be aware that other photos will be taken throughout the symposium. These photos will eventually be shared on promotional websites.

INTERNET
Wi-Fi will be available either via Eduroam. Each seat in the auditorium room is equipped with an electrical socket so you can plug in your own laptop and stay connected.

SMOKING POLICY
According to the Tobacco Act of Quebec, smoking (including electronic cigarette) is prohibited within all closed spaces of Université de Montréal. Further, the Act stipulates that “smoking is prohibited outdoors within a 9-meter radius from any door leading to (...) a university building.” The only designated smoking area will be outside of the Roger Gaudry Building (ground floor).
TRANSPORTATION
A private bus has been assigned to the various travels:

**Date: July 16, 2018**
2:10 p.m. - Meet and greet YUL flight CA879 (Excel Tour staff. Label: 1st Green Chemistry Symposium)
Destination Novotel: 1180 Rue de la Montagne, Montréal, QC H3G 1Z1

**Date: July 17, 2018**
7:30 a.m. - Gathering in hotel Lobby for departure to Université de Montréal
7:45 a.m. - Departure to Université de Montréal: Roger Gaudry building M-425 room, 2900 Boulevard Edouard-Montpetit, Montréal, QC H3T 1J4

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3:45 p.m. - Departure to Virage Campus MIL: 7101 Avenue du Parc, Outremont, QC H2V 1E8
5:45 p.m. - Departure to Bateau-Mouche (speaker dinner): Vieux-Port de Montréal, 55 Quai d’accostage, Montréal, QC H2Y 2E2
9:00 p.m. - Return to Hotel: 1180 Rue de la Montagne, Montréal, QC H3G 1Z1

**Date: July 18, 2018**
7:30 a.m. - Gathering in hotel Lobby for departure to Université de Montréal (bus: Excel Tour)
7:45 a.m. - Departure to Université de Montréal: Roger Gaudry building M-425 room, 2900 Boulevard Edouard-Montpetit, Montréal, QC H3T 1J4

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1:30 p.m. - Departure for City tour
4:30 p.m. - Visit McGill campus: 845 Rue Sherbrooke O, Montréal, QC H3A 0G4
5:30 p.m. – Departure to St-James (speaker dinner): 1145 Avenue Union, Montréal, QC H3B 3C2
9:00 p.m. - Return to Hotel: 1180 Rue de la Montagne, Montréal, QC H3G 1Z1

**Date: July 19, 2018**
12:30 p.m.-Departure Novotel: 1180 Rue de la Montagne, Montréal, QC H3G 1Z1
Destination YUL: Flight CA880
### 1st Green Chemistry Symposium

#### Schedule

**July 17, 2018**

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<th>Time</th>
<th>Speaker</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>08:00-08:40 a.m.</td>
<td>Kuling Ding</td>
<td>Chinese Academy of Sciences</td>
<td>Case Study on Catalytic Conversion of CO2 to Value-Added Organic Chemicals</td>
</tr>
<tr>
<td>08:40-08:50 a.m.</td>
<td>Opening remarks 1</td>
<td>FRQNT/NSFC</td>
<td></td>
</tr>
<tr>
<td>08:50-09:00 a.m.</td>
<td>Opening remarks 2</td>
<td>CGCC</td>
<td></td>
</tr>
<tr>
<td>09:00-09:15 a.m.</td>
<td>Jinlong Gong</td>
<td>Tianjin University</td>
<td>Manipulation of Excitons via Interfacial Structures for Photocatalytic Conversions</td>
</tr>
<tr>
<td>09:15-09:30 a.m.</td>
<td>André Charette</td>
<td>Université de Montréal</td>
<td>Go with the Flow: Expanding the Tool Box of chemistry at Université de Montréal</td>
</tr>
<tr>
<td>09:30-09:45 a.m.</td>
<td>Thierry Ollevier</td>
<td>Université Laval</td>
<td>Development of Chiral Iron Bipyridine Complexes for Asymmetric Synthesis</td>
</tr>
<tr>
<td>09:45-10:00 a.m.</td>
<td>Gongli Tang</td>
<td>Chinese Academy of Sciences</td>
<td>Discovery of Novel Enzymatic Reactions Based on Natural Product Biosynthesis</td>
</tr>
<tr>
<td>10:00-10:15 a.m.</td>
<td>Jiangyun Wang</td>
<td>Chinese Academy of Sciences</td>
<td>Metalloprotein Design Using Genetic Code Expansion</td>
</tr>
<tr>
<td>10:15-11:00 a.m.</td>
<td>Coffee Break and Poster Session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-11:15 a.m.</td>
<td>Chao-Jun Li</td>
<td>McGill University</td>
<td>Exploration of New Chemical Reactivities for Synthetic Efficiency</td>
</tr>
<tr>
<td>11:15-11:30 a.m.</td>
<td>Jian Zhou</td>
<td>East China Normal University</td>
<td>A Journey in the Development of Waste Self-Utilizing Tandem Reactions</td>
</tr>
<tr>
<td>11:30-11:45 a.m.</td>
<td>Pat Forgione</td>
<td>Concordia University</td>
<td>High Value Biomass-Derived 2,5-Furandicarboxylic Acid Derivatives via a Double Decarboxylative Cross-Coupling</td>
</tr>
<tr>
<td>12:00-1:30 p.m.</td>
<td>Lunch and Poster Session</td>
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<td>12:00-1:30 p.m.</td>
<td>Lunch and Poster Session</td>
<td></td>
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</tr>
<tr>
<td>G. Chen</td>
<td>1:30-1:45 p.m.</td>
<td>Yao Fu</td>
<td>University of Science and Technology of China</td>
<td>Catalytic Conversion of Biomass to Value Added Chemicals via Selective Hydrodeoxygenation</td>
</tr>
<tr>
<td></td>
<td>1:45-2:00 p.m.</td>
<td>Ning Jiao</td>
<td>Peking University</td>
<td>Highly Efficient Oxygenation Reactions</td>
</tr>
<tr>
<td></td>
<td>2:00-2:15 p.m.</td>
<td>Sanzhong Luo</td>
<td>Tsinghua University</td>
<td>Bio-inspired Small Molecular Catalysis</td>
</tr>
<tr>
<td></td>
<td>2:15-2:30 p.m.</td>
<td>Joelle Pelletier</td>
<td>Université de Montréal</td>
<td>Experimental and Computational Advances Toward Biocatalytic Oxidation of Non-activated Carbons</td>
</tr>
<tr>
<td></td>
<td>2:30-2:45 p.m.</td>
<td>Yapei Wang</td>
<td>Renmin University</td>
<td>Green Electronics Based on Thermal-sensitive Fluids</td>
</tr>
<tr>
<td>H. Lebel</td>
<td>2:45-3:15 p.m.</td>
<td></td>
<td></td>
<td>Coffee Break</td>
</tr>
<tr>
<td></td>
<td>3:15-3:30 p.m.</td>
<td>Hai-Chao Xu</td>
<td>Xiamen University</td>
<td>Electrochemical Dehydrogenative Cyclization and Annulation Reactions</td>
</tr>
<tr>
<td></td>
<td>3:30-3:45 p.m.</td>
<td>Sylvain Canesi</td>
<td>Université du Québec à Montréal</td>
<td>Development of a Functional Protecting Group for Greener Syntheses</td>
</tr>
<tr>
<td></td>
<td>3:45 p.m.</td>
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<td></td>
<td>Closing remarks – A. B. Charette</td>
</tr>
<tr>
<td></td>
<td>4:00-6:00 p.m.</td>
<td></td>
<td></td>
<td>Visit of new science campus of UdeM and socializing</td>
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<tr>
<td></td>
<td>6:00 p.m.</td>
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<td>Departure for Speakers Dinner</td>
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<tr>
<td></td>
<td>6:30-9:00 p.m.</td>
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<td></td>
<td>Speakers Dinner</td>
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<tr>
<td></td>
<td>9:00 p.m.</td>
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<td>Return to hotel</td>
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<tr>
<td></td>
<td>08:00-9:00 a.m.</td>
<td>Arrival of the audience. (Coffee, juice and pastries available)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>09:00-09:15 a.m.</td>
<td>Jing He</td>
<td>Beijing University of Chemical Technology</td>
<td>Catalytic Conversion of Biomass-based Ethanol or Platform Molecules</td>
</tr>
<tr>
<td></td>
<td>09:15-09:30 a.m.</td>
<td>Congyang Wang</td>
<td>Chinese Academy of Sciences</td>
<td>Manganese-Catalyzed Inert C-H Bond Activation for C-C Bond Formation</td>
</tr>
<tr>
<td>H. Liu</td>
<td>09:30-09:45 a.m.</td>
<td>Claude Legault</td>
<td>Université de Sherbrooke</td>
<td>Development of Oxidative Synthetic Methodologies using an Experimental/Computational Approach</td>
</tr>
<tr>
<td></td>
<td>09:45-10:00 a.m.</td>
<td>Haichao Liu</td>
<td>Peking University</td>
<td>Elective Conversion of Cellulosic Biomass and its Derivatives on Solid Catalysts</td>
</tr>
<tr>
<td></td>
<td>10:00-10:15 a.m.</td>
<td>Zhangjie Shi</td>
<td>Fudan University</td>
<td>Upgrading Cross Coupling</td>
</tr>
<tr>
<td></td>
<td>10:15-10:30 a.m.</td>
<td>Xin-Yuan Liu</td>
<td>Southern University of Science and Technology</td>
<td>Asymmetric Radical Functionalization of Alkenes</td>
</tr>
<tr>
<td></td>
<td>10:30-10:45 a.m.</td>
<td></td>
<td></td>
<td>Coffee Break</td>
</tr>
<tr>
<td></td>
<td>10:45-11:00 a.m.</td>
<td>Gong Chen</td>
<td>Nankai University</td>
<td>C-H Functionalization for Synthesis of Complex Peptides</td>
</tr>
<tr>
<td>A. Charette</td>
<td>11:00-11:15 a.m.</td>
<td>Matthew J. Harrington</td>
<td>McGill University</td>
<td>Biological Inspiration for Green Fabrication of Self-healing Polymer Fibers</td>
</tr>
<tr>
<td></td>
<td>11:15-11:30 a.m.</td>
<td>Yong Huang</td>
<td>Peking University School</td>
<td>Recent Advances in Enamine Chemistry</td>
</tr>
<tr>
<td></td>
<td>11:30-11:45 a.m.</td>
<td>Xiangping Zhang</td>
<td>Chinese Academy of Sciences</td>
<td>Gas Separation with Ionic Liquids: from Material Design to Applications</td>
</tr>
<tr>
<td></td>
<td>11:45-12:00 a.m.</td>
<td>Wei Wang</td>
<td>Lanzhou University</td>
<td>Ultrastable Covalent Organic Framework as Metal-Free Photocatalysts</td>
</tr>
<tr>
<td></td>
<td>12:00-1:30 p.m.</td>
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<td></td>
<td>Speakers Lunch</td>
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<tr>
<td></td>
<td>1:30-4:30 p.m.</td>
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<td></td>
<td>City Tour</td>
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<tr>
<td></td>
<td>4:30-5:30 p.m.</td>
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<td></td>
<td>Visit McGill Campus</td>
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<td>5:30-9:00 p.m.</td>
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<td></td>
<td>Speakers Dinner</td>
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<td></td>
<td>9:00 p.m.</td>
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<td>Return to hotel</td>
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</table>
Tuesday July 17, 9:00 – 9:15 am

Professor Kuiling Ding
Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences

Case Study on Catalytic Conversion of CO₂ to Value-Added Organic Chemicals

Abstract: From the viewpoint of synthetic chemistry, the utilization of CO₂ as a feedstock for the production of value-added organic chemicals may be an option for the recycling of carbon. Therefore, the development of a new reaction pathway and practical catalyst systems for the production of fine chemicals from CO₂ is highly required. In this talk, two case studies on catalytic conversion of CO₂ to value-added organic chemicals will be presented, including PNP-RuII catalyzed homogeneous hydrogenation of cyclic carbonates (which can be readily available from CO2 and epoxides) for production of methanol and the corresponding diols and direct transformation of CO₂ to DMF via ruthenium-catalyzed hydrogenative N-formylation of the corresponding amine.

Academic and Professional Background:

• Ph.D. (1990), Nanjing University, Prof. Yangjie Wu
• Assistant professor, Zhengzhou University (1990)
• Postdoc (1993-94), Ryukoku University, Prof. Teruo Matsuura
• Full professor, Zhangzhou University (1995)
• Shanghai Institute of Organic Chemistry (1998-)

Selected Awards and Honors:

• Humboldt Research Award (2016)
• 1st Yoshida Prize of IOCF (2015)
• Member of Chinese Academy of Sciences (2013)
• National Natural Science Award of China (2009)
• Director SIOC (2009 – )

Selected Recent publications:

Manipulation of Excitons via Interacial Structures for Photocatalytic Conversions

Abstract: It is a promising way to resolve the worldwide energy crisis and environmental pollution by converting solar energy into storable chemical energy through solar water splitting or CO₂ reduction. However, the conversion efficiency is still relatively low since complicated processes involved in photocatalysis, including charge generation, transportation and surface reaction. Given the fact that all these three processes could become the rate limiting step during solar-to-chemical energy conversion, different strategies have been taken to manipulate photogenerated excitons to enhance the photocatalytic efficiencies. Firstly, self-doping has been adopted to narrow the bandgap of TiO₂ to generate more charge carriers upon visible light illumination, while avoiding the introduction of excessive bulk defects that serve as charge recombination centers. Secondly, nanotube and 3-D junction structures have been realized for Fe₃O₄ photoanodes, which significantly improves the charge transportation of this semiconductor with a very short hole diffusion length. Finally, the particle size and distribution of Co₃O₄ surface co-catalysts have been carefully controlled to construct an effective p-n junction that facilitates the charge separation at the semiconductor/co-catalyst interface, obtaining a synergetic enhancement of surface reaction kinetics and bulk charge separation. With all the effort to better manipulate photogenerated excitons in semiconductors, the era of highly effective photocatalytic conversion process for practical applications will be realized.

Academic and Professional Background:
- Ph.D., University of Texas at Austin, Prof. C. B. Mullins
- Postdoc, Harvard University, Prof. G. M. Whitesides
- Professor, Tianjin University

Selected Awards and Honors:
- Cheung Kong Chair Professorship, Tianjin University
- Fellow of the Royal Society of Chemistry

Selected Recent publications:
Go with the Flow: Expanding the Tool Box of Chemistry and Université de Montréal

Abstract: The continuous flow technology is a breakthrough green technique for incorporating the use of potentially harmful and hazardous reagent in organic transformations. This lecture will present an overview of the facilities we have in continuous flow science at the Université de Montréal. The preparation of diazo reagents that served as useful zinc carbenoid reagents under continuous flow conditions will be discussed along with their use in transition metal catalyzed processes. Finally, the preparation of functionalized cyclopropane products will be presented.

Academic and Professional Background:
• Ph.D. (1987), University of Rochester, Prof. Robert K. Boeckman Jr.
• Postdoc (1987-89), Harvard University, Prof. David A. Evans
• Assistant professor, Université Laval (1989-92)
• Professor, Université de Montréal (1992-)

Selected Awards and Honors:
• Chemical Institute of Canada Medal (2018)
• Labex Synorg Chair, Université de Rouen, France (2015)
• Doctorate Honoris Causa, INSA Rouen (2015)
• Aldred Bader Award, CSC (2009)
• Prix Marie-Victorin Government of Québec (2008)
• Arthur C. Cope Scholar Award, American Chemical Society (2007)

Selected Recent publications:
1st Green Chemistry Symposium

Tuesday July 17, 9:45 – 10:00 am

Professor Thierry Ollevier
Université Laval

Development of Chiral Iron Bipyridine Complexes for Asymmetric Synthesis

Abstract: Chiral iron complexes have been developed as green catalysts for selected asymmetric C–C and C–N bond-forming reactions. The development of iron-derived Lewis acids for environmentally benign chemical synthesis will be discussed. Metal salts such as iron(II) triflate and iron(II) perchlorate have been used in asymmetric transformations like the Mukaiyama aldol reaction in aqueous conditions and epoxide opening reactions. Finally, iron-catalyzed asymmetric thia-Michael and Diels-Alder reactions will be presented.

Academic and Professional Background:
- Ph.D. (1997), University of Namur, Prof. A. Krief
- Postdoc (1997), Université Catholique de Louvain, Prof. I. Marko
- Postdoc (1998-2000), Stanford University, Prof. B. M. Trost
- Postdoc (2000-2001), Université de Montréal, Prof. A. B. Charette
- Professor (2001-), Université Laval

Selected Awards and Honors:
- Fellow of the Royal Society of Chemistry (UK) (2016)
- Professor of the Month, awarded by Silicycle (2014)

Selected Recent publications:
1st Green Chemistry Symposium

Tuesday July 17, 10:00 – 10:15 am

Professor Gong-Li Tang
Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences

Discovery of Novel Enzymatic Reactions Based on Natural Product Biosynthesis

Abstract: Two examples including bicyclomycin (BCM) and CC-1065 are presented in this talk. BCM, a commercial antibiotic, belongs to a family of highly functionalized diketopiperazine (DKP) alkaloids bearing a unique O-bridged bicyclo-[4.2.2]piperazinedione ring system, C-1 triol group and terminal exomethylene moiety. Enzymatic characterization of BCM biosynthesis identified a tRNA-dependent cyclodipeptide synthase for the dimerization of Leu and Ile to afford the DKP precursor, followed by six redox enzymes for activation of eight unactivated C-H bonds via regio- and stereo-selective hydroxylation, alkenylation, heterocyclization, as well as cryptic desaturation and epoxidation. Cyclopropanation of unactivated olefinic bonds via addition of a reactive one-carbon species is well-developed in synthetic chemistry, whereas natural cyclopropane biosynthesis employing this strategy is very limited. We identify a two-component cyclopropanase system, composed of a HemN-like radical S-adenosyl-L-methionine (SAM) enzyme C10P and a methyltransferase C10Q, catalyzes chemically challenging cyclopropanation in the antitumor antibiotic CC-1065 biosynthesis. This cyclopropanation strategy not only expands the enzymatic reactions catalyzed by the radical SAM enzymes and methyltransferases, but also sheds new light on the versatile SAM-based biochemistry.

Academic and Professional Background:
• Ph.D. (1999), Shanghai Institute of Organic Chemistry
• Assistant/Associate Professor, Shanghai Institute of Organic Chemistry (1999-2000)
• Postdoc (2000-01), University of California, Davis
• Research Associate, School of Pharmacy, University of Wisconsin, Madison (2001-03)
• Professor, Shanghai Institute of Organic Chemistry, CAS (2003-)

Selected Recent publications:
Metalloprotein Design Using Genetic Code Expansion

Abstract: Through the genetic incorporation of the Tyr-His ligand and CuB site into myoglobin, we recapitulated important features of HCO into this small soluble protein, which exhibits selective O2 reduction activity while generating less than 6% ROS, at more than 1000 turnovers. These results support that Tyr-His crosslink is indeed important for HCO function, and creates the exciting opportunity to rapidly evolve better HCO model proteins to achieve higher activity and selectivity, which may be suitable as alternatives to precious metal catalyst in fuel cells. Another aspect of our ongoing research is the development of new methods for precise attachment of functional metal complexes on biomolecules, which is an important strategy for metalloprotein design. Bioorthogonal chemical reactions together with genetic code expansion technique have provided exciting new means for protein labeling in living cells. The main advantages of photoclick reaction are its fast rate (up to 50 M-1S-1), and that it has no need for toxic copper catalyst.

Academic and Professional Background:

- Ph.D. (2003), University of Illinois, Urbana Champaign
- Postdoc (2003-07), The Scripps Research Institute, La Jolla
- Professor, Institute of Biophysics, Chinese Academy of Sciences (2008-)

Selected Awards and Honors:

- 2015 5th CCS-RSC Young Chemist Award Biosystems, Max Planck Institute of Colloids and Interfaces (2016-2017)
- 2015 Cheung Kong Scholars Programme
- 2014 Young Investigator Award of the Asian Photochemistry Society
- 2013 Young Science & Technology Award of China
- 2013 China National Funds for Distinguished Young Scientists

Selected Recent publications:

1st Green Chemistry Symposium

Tuesday July 17, 11:15 – 11:30 am

Professor Chao-Jun Li
McGill University

Exploration of New Chemical Reactivities for Synthetic Efficiency

Abstract: The development of reactions tools for the direct and efficient conversion of renewable biomass and natural products into high valued chemicals plays an important role in future chemical sustainability. Examples of using naturally occurring C-H bonds and C-O bonds as surrogates of petroleum based organic halides for coupling reactions will be discussed. Finally, examples for late-stage functionalization of biomolecules will be presented.

Academic and Professional Background:
• Ph.D. (1992), McGill University, Profs T. H. Chan and D. N. Harpp
• Postdoc (1992-94), Stanford University, Prof. Barry M. Trost
• Professor (1994-2003), Tulane University, USA
• Professor (2003-), McGill University

Selected Awards and Honors:
• Alfred Bader Award, CSC (2018)
• E. B. Eddy Chair Professorship, McGill University (2009-present)
• Fellow, American Chemical Society (2015)
• R. U. Lemieux Award, CSC (2015)
• Canada Research Chair (Tier I) (2003-present)

Selected Recent publications:
Abstract: To reduce waste generation, we are interested in the development of tandem reactions that internally utilize waste, not only to reduce the time, labor and resources spent on the isolation and purification of intermediates, but to reduce the usage of catalysts or reagents by internal utilization of the waste. By rational design, it is possible to utilize the waste generated from the previous step to catalyze or benefit the downstream step in a tandem reaction through three possible paths: 1) the waste directly catalyzes the next reaction; 2) the waste serves as a co-catalyst or an additive; 3) the waste work as a reagent. By the three pathways, we have developed a variety of tandem reactions that internally use waste from the upstream step to benefit the downstream step. Importantly, such tandem reactions provide a new opportunity to develop new chiral catalyst. We found that phosphorane could effectively activate chiral salen(AlCl) for ketone cyanosilylation by mechanism study of an asymmetric tandem Wittig-cyanosilylation sequence.

Academic and Professional Background:
- Ph.D. (2004), Shanghai Institute of Chemistry, Prof. Yong Tang
- Postdoc (2004-05), University of Tokyo, Prof. Shu Kobayashi
- Postdoc (2005-08), Max-Planck-Institut für Kohlenforschung, Prof. Benjamin List
- Professor (2008-), East China Normal University

Selected Awards and Honors:
- The CSJ Asian International Symposium Distinguished Lectureship Award (2015)
- Fellow of Royal Society of Chemistry (2014)

Selected Recent publications:
Abstract: A new methodology was developed employing biomass-derived 2,5-furandicarboxylic acid to produce 2,5-diaryl furans in good to excellent yields through palladium-catalyzed double decarboxylative cross-couplings. Various aryl halides were successfully evaluated as coupling partners. The present work contributes to the development of useful methodologies employing biomass-derived starting materials for the chemical synthesis industry.

Academic and Professional Background:
- Ph.D. (2001), University of Ottawa, Prof. A. G. Fallis
- Postdoc (2001-2002), Ohio State University, Prof. L. A. Paquette
- Research Scientist (2002-2008), Boehringer Ingelheim, R&D
- Professor (2008-), Concordia University

Selected Awards and Honors:
- University Research Award, Category B (Mid-Career Researcher)

Selected Recent publications:
1st Green Chemistry Symposium

Tuesday July 17, 12:00 – 1:30 pm (poster session)

Professor Zhimin Liu
Institute of Chemistry, Chinese Academy of Sciences

Ionic Liquid-catalyzed CO₂ Conversion Under Mild Conditions

Abstract: The chemical conversion of CO₂ is an important topic since CO₂ is a cheap, abundant, renewable and green C1 resource, which has attracted much attention in recent years. However, the conversion of CO₂ is difficult, especially under mild conditions, due to its thermodynamic and kinetic limitations. Ionic liquids (ILs) are a kind of green solvents, which can be designed with unique functionality via choice of cations and anions and therefore have wide applications in many areas. In particular, the joint effects from the cation and anion of ILs make them be able to serve as efficient catalysts in chemical reactions, showing promising potential in catalysis. In our recent work, we designed some task-specific ILs for CO₂ capture and conversion, which showed high efficiency under mild conditions, originated from the synergistic effects from the cations and anions of ILs. As a bifunctional catalyst for simultaneously activating CO₂ and the substrate, this PIL displayed excellent performance for catalysing the reactions of CO₂ with 2-aminobenzonitriles under ambient conditions, producing a series of quinazoline-2,4(1H,3H)-diones in excellent yields. Imidazolate-based ILs were found to be capable of catalyzing the reactions of atmospheric CO₂ with propargylic alcohols, 2-aminobenzonitriles, o-phenylenediamines and 2-aminothiophenols, producing various kinds of O-containing heterocyclic compounds under metal-free conditions.

Academic and Professional Background:
- Ph.D. (1997), University of Petroleum
- Postdoc (1997), Institute of Chemistry, Chinese Academy of Sciences
- Associate professor, Institute of Chemistry, Chinese Academy of Sciences (1999-2006)
- Professor, Institute of Chemistry, Chinese Academy of Sciences (2006-present)

Selected Awards and Honors:
- Ten Thousand Talent Program of China (2018)
- Leading talent in science and technological innovation, China Ministry of Science (2016)
- 2nd Class prize of National Natural Science Award of China (2011)

Selected Recent publications:
July 17, 2018
12:00 – 1:30 pm

1 Emmanuelle Allouche: Iron-Catalyzed Synthesis of Cyclopropanes by in-situ Generation and Decomposition or Electron-Rich Diazo Compounds

2 Emna Azek: Computational Mechanistic Study of Rhodium-Catalyzed Amination Reactions using N-Mesyloxycarbamates

3 Sourjya Bhattacharjee: New Approaches to Remediation of Chlorinated Solvents in Groundwater Using Nanoscale Zerovalent Iron

4 Elsa Deruer: Stereoselective Arylative-Cyclopropanation Process and Selective Carbon-Phosphorus Bond Formation on Aniline

5 Eric Godin: General and Efficient Synthesis of Alkynyl Sulfides via Copper Catalysis

6 Zheng Huang: Progress Towards the Total Synthesis of Heteroclitin N

7 Calvine Lai: Iron-catalyzed Animation of Thioethers and Sulfoxides in Continuous Flow

8 Jianbin Li: Photo-induced Csp2-H Difluoromethylthiolation: Synthesis of Aryl Difluoromethylthioethers

9 Prof. Zhimin Liu: Ionic Liquid-catalyzed CO₂ Conversion Under Mild Conditions

10 Leiyang Lyu: Cross-coupling of Phenol Derivatives with Umpolung Aldehydes Catalyzed by Nickel
1st Green Chemistry Symposium

Poster Session

July 17, 2018
12:00 – 1:30 pm

11 Zihang Qiu: Formal Aromaticity-Transfer for Palladium-Catalyzed Coupling between Phenols and Pyrrolidines/Indolines

12 Saher Siddiqui: Dioxaborolane-mediated Cyclopropanation of Oxidation-prone and Base-sensitive Allylic Alcohols to Access Enantioenriched Cyclohexyliminodiacetic Acid (CIDA) Borocyclopropanes

13 Sylvain Taillemaud: Efficient Synthesis of Enantioenriched Chlorocyclopropanes: Observing and Bypassing the Halogen Scrambling Mechanisms on Zinc Carbenoids

14 Yang Zeng: Studies of the Most Stable Adsorption Geometries of Two Chiral Modifiers on Pt(111)
Catalytic Conversion of Biomass to Value Added Chemicals via Selective Hydrodeoxygenation

Abstract: Mass production of specific oxygen-containing functional chemicals is a promising way for the high value utilization of biomass. And one current challenge is the selective removal or retention of specific oxygen groups for over-oxygenated functionalized biomass feedstock. In this study, a complex catalytic system of triflate metal salts + Pd/C was used to achieve the selective hydrodeoxygenation of biomass platforms. In particular, (a) change the hydrogen activation mode to regulate the reaction path, the hydrogenolysis cleavage of different C-O bonds is achieved; (b) with the difference of the catalytic activity on reaction substrate groups, the selective hydrogenolysis of different oxygen-containing groups is achieved; (c) screen triflate metal salts (e.g. W(OTf)6, Hf(OTf)4, Al(OTf)3, Sc(OTf)3, Ce(OTf)3, etc.) to regulate Lewis acidity, the regioselective hydrogenolysis of the oxygen-containing groups is achieved. To conclude, a selective hydrodeoxygenation of biomass-based platform compounds has been developed, provided an effective strategy for the production of value added functional chemicals, such as polyester monomer, lubricant, and surfactant.

Academic and Professional Background:
• Ph.D. (2005), University of Science and Technology of China, Prof. Qiang-Xiang Guo
• Associate Professor (2000-2005), University of Science and Technology of China
• Professor (2010-), University of Science and Technology of China

Selected Awards and Honors:
• The National Natural Science Award of China (Second Prize, Place No. 2) (2017)
• Min Enze Prize for Outstanding Contribution to the Energy and Chemical Industry (2017)
• Ministry of Science and Technology Youth Science and Technology Innovation Leader (2017)
• Leading Scientist of Ten Thousand Talents Program of China (2017)

Selected Recent publications:
Highly Efficient Oxygenation Reactions

Abstract: Oxygen-containing compounds are widely present in both natural products and synthetic compounds, for example, they show up within functional materials, top-selling drugs, as well as bioactive molecules. To synthesize these compounds in a green and sustainable way, researchers have focused on the direct functionalization of hydrocarbons via C–H and/or C–C bond cleavage. Although significant progress has been made in the direct functionalization of simple hydrocarbons, direct incorporation of O-atoms into the simple substrates via C–H and/or C–C bond cleavage remains challenging due to the inert chemical bonds. By using molecular oxygen, DMSO, H2O, and other readily available reagents as oxygen source, we recently developed some C-H/C-C bond oxygenation reactions for the synthesis O-containing compounds. In this presentation, our recent progress on the direct oxygenation will be introduced.

Academic and Professional Background:
- Ph.D. (2004), Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Prof. Shengming Ma
- Postdoc (2004-2006), Max Planck Institute für Kohlenforschung (MPI) Mülheim, Prof. M. T. Reetz
- Associate Professor (2007-), State Key Laboratory of Natural and Biomimetic Drugs, Peking University

Selected Awards and Honors:
- Bayer Investigator Award, (2017)
- Yangtze river scholars Distinguished Professor (2015)
- Fellow, Royal Society of Chemistry (2015)
- Roche Chinese Young Investigator Award (2014)

Selected Recent publications:
Bio-inspired Small Molecular Catalysis

Abstract: To seek new catalyst with superior performance and broad applicability remains a central theme in catalysis. Inspired by Nature, we have developed small molecular catalysts such as chiral primay amines, chiral carbocation and orthoquinone as both functional and mechanistic enzyme mimics, showing unprecedented scopes and potentials in enantioselective transformations Herein, I present our recent progresses in developing these bio-inspired catalysts.

Academic and Professional Background:
- Ph.D. (2004), Institute of Chemistry, Chinese Academy of Sciences
- Visiting Scholar (2004-2005), The Ohio State University, Prof. P. G. Wang
- Visiting Scholar (2009), Stanford University, Pro. B. M. Trost
- Assistant Professor (2005), Institute of Chemistry, Chinese Academy of Sciences
- Professor (2011), Institute of Chemistry, Chinese Academy of Sciences
- Professor (2017), Tsinghua University

Selected Awards and Honors:
- POC Youth Award of Chinese Chemical Society (2017)
- Chiral Youth Award of Chinese Chemical Society (CCS) (2016)

Selected Recent publications:
Experimental and Computational Advances Toward Biocatalytic Oxidation of non-Activated Carbons

**Abstract:** Biocatalytic oxidations can offer highly selective reactivity at non-activated sites, yet they require engineering to increase their reagent scope. We will discuss high-throughput screening of thousands of biocatalyst variants to obtain a high-value flavor agent. We will also present computational simulations to map the energy of oxygen and reagent interactions with the catalyst.

**Academic and Professional Background:**
- Ph.D. (1995), McGill University
- Postdoc (1997), Université de Montréal
- Postdoc (1999), University of Zurich
- Professor (1999-), Department of Chemistry, Université de Montréal
- Adjunct Professor (2000-), Department of Biochemistry, Université de Montréal

**Selected Awards and Honors:**
- ERATO Active Enzyme Molecule Invited Speaker (2014)
- Vice-chair (2012) and Chair (2014), Gordon Research Conference on Biocatalysis
- Presentation Award, ACS 238th National Meeting, Advances in Biocatalysis

**Selected Recent publications:**
Green Electronics Based on Thermal-sensitive Fluids

Abstract: Smart and portable electronics are occupying a notable position in our daily life owing to the rapid development of Big Data, Cloud Computing and Internet of Things. However, due to vulnerability of rigid parts on these smart electronics in long-term service life and certain toxicity of constituent materials, there are still many urgent issues needed to be settled. Nowadays, the functional elements or materials of electronics are mainly composed of metal oxides, transition metals, and carbon-based nano-materials. All of them are lack of flexibility and eco-friendliness. Considering that the liquids intrinsically have outstanding deformability, self-healing ability and facile doping capacity, we have developed a series of green, recyclable and flexible electronic sensors based on thermal-sensitive fluids. It is found ionic liquids and a kind of composite electrolytes based on aliphatic diols are excellent candidates of green and thermal-sensitive fluids. The fluidic materials were integrated with other green and bio-compatible substrates to fabricate flexible and recyclable electronics with long service life. Moreover, these electronic devices exhibit outstanding stability and high reproducibility under cyclic tests. Notably, these fluids can also be doped with functional materials (e.g. photothermal agents and magneto-thermal agents) to realize optical sensing and electromagnetic wave sensing. Additionally, these liquid electronics can restore almost 100% sensing ability after healed from two separated parts.

Academic and Professional Background:
• Ph.D. (2009), Tsinghua University, Prof. Xi Zhang
• Postdoc (2010-2011), University of North Carolina at Chapel Hill, Prof. J. M. De Simone
• Professor (2012), Renmin University

Selected Awards and Honors:
• Changjiang Young Scholar of Ministry of Education (2017)
• Young Chemists Award of Chinese Chemical Society (2014)
• New Century Excellent Talents in University from Ministry of Education (2012)

Selected Recent Publications:
Electrochemical Dehydrogenative Cyclization and Annulation Reactions

Abstract: Cross-coupling of R–H (R = C or heteroatom) bonds is a powerful approach for the construction of carbon–carbon as well as carbon–heteroatom bonds because it offers several advantages including the use of simple and easily available starting materials and the elimination of substrate prefunctionalization. Nonetheless, current methods frequently require the use of stoichiometric metal or organic oxidants, which create potential safety hazards for large-scale synthesis and frequently impose considerable amount of waste on the environment. Organic electrochemistry is a powerful and attractive tool for organic synthesis because it employs electrons as “reagents” to achieve oxidation or reduction reactions. Our recent research on the electrochemical dehydrogenative cyclization and annulation reactions will be discussed. These reactions proceed in an oxidizing reagent-free fashion and produce H2 as the only theoretical byproduct.

Academic and Professional Background:
- Ph.D. (2010), Washington University, Prof. K. D. Moeller
- Postdoc (2011-2013), Yale University, Prof. J. A. Ellman
- Associate Professor (2013-14), Xiamen University
- Professor (2014-), Xiamen University

Selected Awards and Honors:
- The Distinguished Lectureship Award, sponsored by Chemical Society of Japan (2018)
- Chinese Chemical Society Youth Award (2017)

Selected Recent publications:
Development of a Functional Protecting Group for Greener Synthesis

Abstract: Preliminary results on the development of a “functional protecting group” will be presented. This method is envisaged as an alternative to the free protecting group concept which is often difficult to implement such guidelines when dealing with challenging polyfunctional molecules. A “functional” protecting group is one which not only masks the reactivity of a sensitive ensemble, but it also carries a moiety of the final target, which will be transferred to the substrate at the time of deprotection. This atom economical approach requires only slightly thermic and basic conditions, releases sulfur dioxide as unique by-product and enables the rapid formation of carbocycles and heterocycles present in alkaloids such as indoles.

Academic and Professional Background:
• Ph.D. (2004), Université Lyon I, Prof. M. A. Ciufolini
• Postdoc (2006), Université de Sherbrooke, Prof. Pierre Deslongchamps
• Professor (2006-), Université du Québec à Montréal

Selected Awards and Honors:
• Keith Fagnou Award, CSC (2018)
• Boehringer Ingelheim Young Investigator Award (2009)

Selected Recent publications:
Catalytic Conversion of Biomass-based Ethanol or Platform Molecules

Abstract: The selective activation of carbon-oxygen bonds and related chemical bonds in oxygen-containing molecules is of great significance for the clean conversion of biomass to high-value chemicals, and is also of great challenge for the realization of biomass-based chemical industry. Herein, the synergetic catalysis between metal and supports at metal-support interfaces has been proposed, by which the selective adsorption and activation of carbon-oxygen related chemical bonds is supposed to be enhanced, and the undesired carbon-carbon activation and side reactions are to be inhibited. To understand the mechanism for the catalytic conversion of biomass-based molecules, such as ethanol or furfural compounds, the adsorbed and activated modes of carbon-oxygen bonds, the intermediates, and the product distribution have been in-situ monitored. The research is supposed to be useful and significant for the development of clean, green, and efficient catalytic technology for biomass-based chemical industry.

Academic and Professional Background:
• Ph.D. (1999), Beijing University of Chemical Technology (BUCT)
• Associate Professor (1998-2001), Beijing University of Chemical Technology (BUCT)
• Professor (2001-), Beijing University of Chemical Technology (BUCT)
• Director, State Key Laboratory of Chemical Resource Engineering
• Academic visitor (2006-2007), Max-Planck Institut für Kohlenforschung

Selected Awards and Honors:
• Distinguished Young Scholars by National Natural Science Foundation of China
• New-century excellent talent honored by Ministry of Education
• Outstanding teacher honored by Ministry of Education
• First class “Science and Technology” award honored by Science and Technology Committee of Beijing

Selected Recent publications:
Manganese-Catalyzed Inert C–H Bond Activation for C–C Bond Formation

Abstract: The noble transition-metal (i.e., Pd, Ru, Rh, and Ir) catalysts play a dominant role in the stage of inert C–H bond functionalization. Given the rarity of these transition metals, the development of novel, efficient, and more economic catalysts is highly desirable. In this context, manganese might be a promising candidate for new catalyst hunting. Manganese is the twelfth most abundant element in the earth’s crust, the richness of which ranks the third after iron and titanium among all transition metals. Our efforts are mainly dedicated to the development of catalytic transformations of C–H bonds promoted by manganese. Despite that stoichiometric cyclometalation reactions of MnR(CO)5 (R = CH3, Bn, etc.) have been well documented, significant challenges still remain to achieve an efficient catalytic turnover and further develop new types of C–H transformations beyond the stoichiometric ones. Recently, we have achieved a series of manganese-catalyzed aromatic C–H transformations by using new strategies, which will be the focus of this talk.

Academic and Professional Background:

• Ph.D. (2005), Peking University, Prof. Zhenfeng Xi
• Postdoc (2005-2007), Peking University, Prof. Zhenfeng Xi
• Postdoc (2007-2010), University of Münster, Prof. Frank Glorius
• Professor (2010-), Institute of Chemistry, Chinese Academy of Sciences
• Professor (2015-), University of Chinese Academy of Sciences

Selected Awards and Honors:

• Asian Core Program Lectureship Award (Japan) (2015)
• Asian Core Program Lectureship Award (Singapore) (2015)
• The National Science Fund for Excellent Young Scholars, China (2013)
• Alexander von Humboldt Equipment Subsidy, Germany (2011)

Selected Recent publications:

Development of Oxidative Synthetic Methologies using an Experimental/Computational Approach

Abstract: An brief overview of our research program will be described. The synthesis of pyrazoles and indoles using an electrophilic amination methodology that rely on diazirines will be presented. Recent developments in the field of iodine(III)-mediated synthesis of alpha-substituted ketones will be presented. The role of mechanistic studies involving computational chemistry will be discussed.

Academic and Professional Background:
- Ph.D. (2005), Université de Montréal, Prof. A. B. Charette
- Postdoc (2006-2007), UCLA, Prof. K. N. Houk
- Professor (2008-), Université de Sherbrooke

Selected Awards and Honors:
- Faculty Teaching Award, Université de Sherbrooke (2018)
- CNC-IUPAC Travel Award (2016)
- UCLA Chancellor’s Award for Postdoctoral Research (2008)
- NSERC PDF Postdoctoral Fellowship (2016)

Selected Recent publications:
Elective Conversion of Cellulosic Biomass and its Derivatives on Solid Catalysts

Abstract: Cellulose is the most abundant source of biomass on earth. Cellulose and its derivatives (e.g. glucose, sorbitol and 5-hydroxymethyl furfural) provide renewable alternatives to fossil fuels for synthesis of fuels and chemicals. In this work, we report our progress in catalytic conversion of cellulose and its derivatives into alcohols and carboxylic acids, and also our understanding on the requirements for catalytic functions and reaction mechanisms. This work was carried out mainly by Y. Liu, C. Chen, Q. Sun and F. Wang under the financial support from the National Natural Science Foundation of China and National Basic Research Project of China.

Academic and Professional Background:
- Ph.D. (1996), Beijing Research Institute of Petroleum Processing
- Postdoc (1997-2003), University of Tokyo
- Postdoc, University of California, Berkeley
- Professor (2003), Peking University

Selected Awards and Honors:
- Changjiang Distinguished Professor of Chemistry, Peking University
- The Enze Min Outstanding Contribution Award for Energy & Chemical Engineering (2013)
- The National Catalysis Prize for Young Scientists of China (2012)
- National Science Fund for Distinguished Young Scholars of China (2008)

Selected Recent publications:
Upgrading Cross Coupling

Abstract: Conventional cross coupling is one of the most powerful methods to construct carbon-carbon bonds starting from organohalides and organometallic reagents, catalyzed by late transition-metal catalysts in general. With our and others’ efforts, the electrophilic partner can be taken place of by O-based electrophiles. C-H bonds could also applied as coupling partners, coupled with various organometallic reagents, as well as another molecule of C-H bonds. To avoid the utilization of late and heavy transition-metal catalysts, the earth-abundant transition-metal and even metal free catalytic systems were built up to proceed the cross coupling between organohalides and arenes. These studies may lead the evolution of cross coupling in an environmentally benign manner.

Academic and Professional Background:
- Ph.D. (2001), Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Prof. Shengming Ma
- Research Associate (2002-2004), University of Chicago, Prof. C. He
- Postdoc (2001-2002), Harvard University, Prof. Gregory L. Verdine
- Professor (2004-2017), Peking University
- Professor (2017-), Fudan University

Selected Awards and Honors:
- National High-level personnel of special support program (2017)
- Bayer Investigator Award (2015t)
- Roche Innovative Chemistry Award (2015)
- Lilly Excellence Chemistry Award (2012)

Selected Recent publications:
**1st Green Chemistry Symposium**

**Wednesday July 18, 10:15 – 10:30 am**

**Professor Xin-Yuan Liu**  
*Southern University of Science and Technology*

**Asymmetric Radical Functionalization of Alkenes**

**Abstract:** Unactivated alkenes represent excellent building blocks for chemical synthesis, thus providing an exceptional opportunity for the construction of complex molecules. The selective addition of both carbon- and heteroatom-centered radicals to unactivated alkenes represents an exceptionally efficient way for the direct functionalization of such alkenes. Although great endeavors have been devoted to various racemic versions of radical functionalization of alkenes, the development of catalytic asymmetric methods has proven a formidable challenge largely due to the intrinsic reactivity of the involved odd-electron species. To address this challenge and as part of our continued interest in the area of radical chemistry and asymmetric catalysis, we have successfully developed some dual-catalytic asymmetric strategies for both asymmetric radical 1,2-difunctionalization of alkenes and novel enantioselective remote C-H/C bond functionalization triggered by radical addition of alkenes/alkynes.

**Academic and Professional Background:**

- Ph.D. (2010), The University of Hong Kong, Prof. Chin-Ming Che
- Research assistant (2004-2005), Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Prof. Gang Zhao
- Postdoc (2010-2012), Scripps Research Institute/The University of Hong Kong, Profs Carlos F. Barbas, Chi-Ming Che
- Professor (2012-), Southern University of Science and Technology

**Selected Awards and Honors:**

- Chang Jiang Scholars Program for Young Scholars (2017)
- National Excellent Young Scholar of China (2017)
- The Distinguished Lectureship Award, Japan (2017)
- SUSTech Outstanding Researcher Awards (2016)

**Selected Recent publications:**

C–H Functionalization for Synthesis of Complex Peptides

Abstract: We will discuss our recent investigation of palladium-catalyzed bidentate auxiliary-directed C–H functionalization reactions for aAA substrates. Our strategies utilize two different types of amide-linked auxiliary groups, attached at the N or C terminus of aAA substrates, to exert complimentary regio- and stereo-control on C–H functionalization reactions through palladacycle intermediates. We will also present a highly efficient and generally applicable strategy for constructing a new type of cyclophane-braced peptide macrocycles using palladium-catalyzed intramolecular C(sp3)-H arylation reactions.

Academic and Professional Background:
- Ph.D. (2004), Columbia University, Prof. Dalibor Sames
- Postdoc (2005-2008), Memorial Sloan-Kettering Cancer Center, Prof. Samuel J. Danishefsky
- Assistant/associate Professor (2008-2015), Pennsylvania State University
- Adjunct Professor (2018-), Pennsylvania State University
- Professor (2015-), SKLEOC, Nankai University

Selected Awards and Honors:
- ACP lectureship awards in Japan and Malaysia (2018)
- Tianjin Young Science and Technology Innovation Leader (2017)
- National Natural Science Fund for Distinguished Young Scholars of China (2017)
- Amgen Young Investigator Award (2013)

Selected Recent publications:
Biological Inspiration for Green Fabrication of Self-healing Polymer Fiber

**Abstract:** Biological organisms produce high performance fibers from proteins, which serve as important archetypes for sustainable production of next-generation polymeric materials. Elucidation of the underlying structure-function relationships, as well as the details of the biofabrication process are key first steps towards technology transfer. Here, I discuss our work on the mussel byssus, a collection of tough and self-healing fibers that have emerged as a crucial role model for bio-inspired polymer design.

**Academic and Professional Background:**
- Ph.D. (2008), University of California, Santa Barbara
- Postdoc (2008-2010), Max Planck Institute of Colloids and Interfaces
- Research Group Leader, Max Planck Institute of Colloids and Interfaces (2010-2017)
- Assistant Professor, McGill University (2017-)

**Selected Awards and Honors:**
- Associate Faculty Member of the International Max Planck Research School on Multi-scale Biosystems, Max Planck Institute of Colloids and Interfaces (2016-2017)
- Guest Member of the Biomaterials Department, Max Planck Institute of Colloids and Interfaces (2016-2017)
- Alexander von Humboldt Fellowships for Postdoctoral Researchers

**Selected Recent publications:**
Abstract: The chemistry of enamine has enjoyed a new renaissance, thanks to the blooming field of HOMO-raising organocatalysis. So far, progress in this field is concentrated on α-functionalization of carbonyls, in which a carbon-carbon or a carbon-heteroatom single bond is typically formed. In sharp contrast, other types of bond formation, such as double bonds, triple bonds and rings, have received little attention. We envisioned that enamines containing an extra functionality would provide a unique entry into such new bond assemblies. Recently, we designed a number of functionalized enamine species. Subsequent chemical manipulations revealed unique reactivity of these intriguing intermediates. A number of unexpected and previously unattainable transformations were discovered and studied.

Academic and Professional Background:
- Ph.D. (2002), University of Chicago, Prof. V. H. Rawal
- Postdoc (2002-2004), California Institute of Technology, Prof. D. W. C. MacMillan
- Senior Scientist (2004-2009), Merck Research Laboratories,
- Professor (2009-), Peking University
- Associate Dean of School of Chemical Biology and Biotechnology, Peking University
- Deputy Director, The State Key Laboratory of Chemical Oncogenomics

Selected Awards and Honors:
- Asia Core Program Lectureship Award (Hong Kong, Singapore, Korea) (2014-2017)
- Roche Chinese Young Investigator Award (2014)
- Bayer Investigator Award (2014)
- ACS and Organic Letters “Outstanding Author of the Year” (2014)

Selected Recent publications:
1st Green Chemistry Symposium

Wednesday July 18, 11:30 – 11:45 am

Professor Xiangping Zhang
Institute of Process Engineering, Chinese Academy of Sciences

Gas Separation with Ionic Liquids: From Material Design to Applications

Abstract: In this presentation, a series new ionic liquids for CO2/SO2/NH3 separation were designed. The absorption mechanism were studied by molecular simulation and experimental characterization. For acidic gas separation, the stronger the H-bond interaction between ILs and CO2/SO2 and the larger the volume of the anion, the higher influence CO2/SO2 capacity greatly. However, for alkaline NH3, the H-bond and cations play important roles, and introducing the metal ion can improve the absorption ability more than 30 times. The pilot plants of CO2 separation from biogas, SO2 removal from flue gas and NH3 separation from purge gas in an ammonia plant with IL-based solvents were established, indicating great potentials for industrial applications. Combing the advantages of both ILs and polymer, a series of composite membranes with ILs, ZIF-8 nanoparticles and organic polymer (Pebax) were also developed. These ILs based composite membranes were evaluated by testing the permeability of N2, CH4, CO2, and calculating the selectivities. As a result, Pebax/ZIF-8/[C4Py][NTf2] composite membranes exhibit superior CO2 permeation.

Academic and Professional Background:
- Ph.D. (2002), Dalian University of Technology
- Postdoc (2002-2004), Institute of Process Engineering, Chinese Academy of Sciences
- Associate Professor (2004-2008), Institute of Process Engineering, Chinese Academy of Sciences
- Researcher (2006-2008), Norwegian University of Science and Technology
- Professor (2008-), Institute of Process Engineering, Chinese Academy of Sciences

Selected Awards and Honors:
- The 8th Hou Debang Chemical Science & Technology Innovation Award (2016)
- The Beijing Hundreds of Leading Talents Training Project of Science and Technology, (2016)
- National Science Fund for Distinguished Young Scientists (2014)
- Nomination Award of the 4th Top Ten Outstanding Women in CAS (2012)
- National Award for Natural Sciences in China (2010)

Selected Recent publications:
Ultrastable Covalent Organic Framework as Metal-free Photocatalysts

Abstract: Covalent organic frameworks (COFs) represent a new type of crystalline porous materials which are constructed with organic building blocks via strong covalent bonds. Low density, large surface area, tunable property and functionality, together with regular porous structures have rendered the COF materials as the promising candidates for functional applications. In order to make the best use of π-conjugated structures, we develop a "killing two birds with one stone" strategy and construct a series of ultrastable benzoxazole-based COFs, LZU-190, LZU-191, and LZU-192, as metal-free photocatalysts. Beneficial from the formation of benzoxazole rings through the reversible/irreversible cascade reactions, the synthesized COFs exhibit permanent stability in the presence of strong acid (9 M HCl), strong base (9 M NaOH), or sun light. Meanwhile, reticulation of benzoxazole moiety into π-conjugated COF frameworks decreases the optical band gap and therefore increases the capability for visible-light absorption. As a result, excellent photoactivity and unprecedented recyclability of LZU-190 has been illustrated in the visible-light-driven oxidative hydroxylation of arylboronic acids to phenols.

Academic and Professional Background:
• Ph.D. (1998), Lanzhou University
• Lecturer (1999-2000), Lanzhou University
• Postdoc (2000-2001), University of Stuttgart
• Postdoc (2001-2002), University of Southern California
• Scientific Researcher (2002-2006), University of Stuttgart
• Professor (2006-), Lanzhou University

Selected Awards and Honors:
• Cheung Kong Professor, Lanzhou University (2006-)
• National Natural Science Foundation for Distinguished Young Scholars of China (2014)
• Asian Core Program Lectureship Award (2014)
• Tian-Juan Wang Magnetic Resonance Award (2012)

Selected Recent publications:
1st Green Chemistry Symposium

Success is a journey; together we achieve more

**NSFC Delegates**
**Yongjun Chen**
Executive Deputy Director-General
Department of Chemical Sciences
National Natural Science Foundation of China

**Xiuping Liu**
Division Director
Bureau of International Cooperation
National Natural Science Foundation of China

**FRQNT Delegates**
**Laurence Martin-Gosselin**
Program Manager
International Partnership
Fonds Recherche Québec-Nature et technologies

**Yves Maroïs**
Program Manager
Team Research Project
Fonds Recherche Québec-Nature et technologies

**CCVC Co-Directors**
**André Charette**
Chair - Department of Chemistry
Canada Research Chair in Stereoselective Synthesis of Bioactive Molecules
Director NSERC CREATE Training Program in Continuous Flow Science
Co-Director FQRNT Centre for Green Chemistry and Catalysis
Université de Montréal

**Chao-Jun Li**
Canada Research Chair (Tier I) in Green/Organic Chemistry
Co-Director FQRNT Centre for Green Chemistry and Catalysis
McGill University
Every ending is a new beginning. Farewell!

1st Green Chemistry Symposium
July 17-18, 2018
Montréal, Qc, Canada