To NGAI (魏濤)

Associate Professor
Department of Chemistry
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Education Attainment:

1996 – 1999 Bachelor of Science in Chemistry, *First Class Honours*
Department of Chemistry, The Chinese University of Hong Kong.

1999 – 2003 Ph.D in Chemistry, Department of Chemistry, The Chinese University of Hong Kong.
Dissertation title: "Interaction of Polymer Chains in Solution"
Advisor: Professor Chi Wu

Employment History:

2012. 01 – present **Associate Professor,** Department of Chemistry, The Chinese University of Hong Kong, Hong Kong.

2008. 1 – 2011. 12 **Assistant Professor,** Department of Chemistry, The Chinese University of Hong Kong, Hong Kong.

2006. 1 – 2007. 12 **Research Assistant Professor**, Department of Chemistry, The Chinese University of Hong Kong.

2005. 7 – 2005. 12 **Postdoctoral Associate**, Department of Chemistry, University of Minnesota, MN. USA.
Advisor: Professor Timothy Lodge

2003. 5 – 2005. 4.	**Postdoctoral Associate** in Polymer Division, BASF Aktiengesellschaft, Ludwigshafen, Germany Advisor: Dr. Helmut, Auweter and Dr. Sven-Holger, Behrens

Research Interests:

My research interests center on various areas of surface and colloid science. I focus on the design and study the particle behaviour at the fluid interfaces through combination of colloid science, polymer chemistry and soft matter physics. I also focus on the developing and applying single-particle force microscopy, total internal reflection microscopy (TIRM), and active single-particle microrheometer, to measure the intermolecular and surface forces as well as viscoelastic properties of soft materials. Recently, I have been highly involved to the development of orthopaedic implant materials by collaborative working with pre-clinical and material scientists. Current areas of focus include:

1. Particles at the interface: from fundamentals to materials
2. Measuring intermolecular and surface forces
3. Microrehology of soft matter and biomaterials
4. Development of orthopaedic implant biomaterials

Research-related Awards:

2014	Research Excellent Award 2014, CUHK
2013	Young Research Award 2013, CUHK
2004	Croucher Fellowship, The Croucher Foundation, Hong Kong
1997	Ko Ho Ning Scholarship, United College, CUHK
1997	United College Endowment Fund Prize, CUHK

Publications:

1 Book (editor), 2 Book Chapters; and 92 Scientific Journal Papers.

Recent Publications

Yifeng Sheng, Guanqing Sun, and **To Ngai***, “Dopamine Polymerization in Liquid Marbles: A General Route to Janus Particle Synthesis”, *Langmuir* **2016**, *32*, 3122-3129.

Guanqing Sun, Yifeng Sheng, and **To Ngai***, “Insertion and Confinement of Air Bubbles Insides a Liquid Marble”, *Soft Matter* **2016**, *12*, 542-545.

Man-hin Kwok, and **To Ngai***, “A Confocal Microscopy Study of Micron-Sized Poly(N-isopropylacrylamide) Microgel Particles at the Oil-Water Interface and Anisotopic Flattening of Highly Swollen Microgel”, *Journal of Colloid and Interface Science* **2016**, *461*, 409-418.

Yifeng Sheng, Guanqing Sun, Jie Wu, Guanghui Ma*****, and **To Ngai***, “Silica-Based Liquid Marbles as Microreactors for the Silver Mirror Reaction”, *Angewandte Chemie International Edition* **2015**, *54*, 7012-7017.

Changpeng Li, Changdao Mu, Wei Lin*, and **To Ngai***, “Gelatin Effects on the Physicochemical and Hemocompatible Properties of Gelatin/PAAm/Laponite Nanocomposite Hydrogels”, *ACS Applied Materials & Interfaces* **2015**, *7*, 18732-18741.

Xiaochen Xing, Li Hua, and **To Ngai***, “Depletion versus Stabilized Induced by Polymers and Nanoparticles: The State of the Art”, *Current Opinion in Colloid & Interface Science* **2015**, *20*, 54-59.

Zhaohui Wang, Xiangjun Gong*****, and **To Ngai***, “Measurements of Long-Range Interactions between Protein-Functionalized Surfaces by Total Internal Reflection Microscopy”, *Langmuir* **2015**, *31*, 3101-3107.

Xiangjun, Gong, Zhaohui Wang and **To Ngai*** “Direct Measurements of Particle-Surface Interactions in Aqueous Solutions with the Total Internal Reflection Microscopy”, *Chemical Communications* **2014,** *50*, 6556-6570.

“The Kids’ Lab 2016 Experiment challenge, led by BASF, in collaboration with Department of Chemistry CUHK, offers a fantastic opportunity for students to showcase their innovative ideas. I’m really love to see that most submissions could apply chemistry knowledge in practical, creative ways to design experiments which can help small kids learn science. Looking forward to seeing their presentation in person at CUHK on 19 November 2016”.

Ying-Lung Steve TSE

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Education Attainment:

2006 – 2011	**Ph.D.** in Chemistry, Department of Chemistry, Stanford University, USA Dissertation Title: "A lattice model of the translational dynamics of nonrotating rigid rods" Advisor: Professor Hans C. Andersen
2001 – 2005	**B.Sc.** in Chemistry, Mathematics, and Computer Science *Valedictorian*, *Summa Cum Laude* Towson University, USA

Employment History:

2015.10 – Present	Assistant Professor, The Chinese University of Hong Kong, Hong Kong
2012.08 – 2015.09	Postdoctoral Scholar, The University of Chicago, USA. Advisor: Professor Gregory A. Voth
2011.08 – 2012.08	Postdoctoral Scholar, The University of Chicago, Colorado School of Mines, and The National Renewable Energy Laboratory, USA Advisor: Professor Gregory A. Voth

Publications:

1. Chen, C.; **Tse, Y.-L. S.**; Lindberg, G. E.; Knight, C.; Voth, G. A., Hydroxide solvation and transport in anion exchange membranes. *J. Am. Chem. Soc.* **2016,** *138*, 991-1000.
2. **Tse, Y.-L. S.**; Chen, C.; Lindberg, G. E.; Kumar, R.; Voth, G. A., Propensity of hydrated excess protons and hydroxide anions for the air-water interface. *J. Am. Chem. Soc.* **2015,** *137*, 12610–12616.
3. **Tse, Y.-L. S.**; Knight, C.; Voth, G. A., An analysis of hydrated proton diffusion in ab initio molecular dynamics. *J. Chem. Phys.* **2015,** *142*, 014104.
4. **Tse, Y.-L. S.**; Voth, G. A.; Witten, T. A., Ion mixing, hydration, and transport in aqueous ionic systems. *J. Chem. Phys.* **2015,** *142*, 184905.
5. **Tse, Y.-L. S.**; Sarode, H. N.; Lindberg, G. E.; Witten, T. A.; Yang, Y.; Herring, A. M.; Voth, G. A., Chloride enhances fluoride mobility in anion exchange membrane/polycationic systems. *J. Phys. Chem. C* **2014,** *118*, 845-853.

6. Savage, J.; **Tse, Y.-L. S.**; Voth, G. A., Proton transport mechanism of perfluorosulfonic acid membranes. *J. Phys. Chem. C* **2014,** *118*, 17436-17445.
7. **Tse, Y.-L. S.**; Herring, A. M.; Kim, K.; Voth, G. A., Molecular dynamics simulations of proton transport in 3M and Nafion perfluorosulfonic acid membranes. *J. Phys. Chem. C* **2013,** *117*, 8079-8091.
8. **Tse, Y.-L. S.**; Andersen, H. C., Modified scaling principle for rotational relaxation in a model for suspensions of rigid rods. *J. Chem. Phys.* **2013,** *139*, 044905.
9. **Tse, Y.-L. S.**; Andersen, H. C., A lattice model of the translational dynamics of nonrotating rigid rods. *J. Chem. Phys.* **2012,** *136*, 024904.
10. Abel, S. M.; **Tse, Y.-L. S.**; Andersen, H. C., Kinetic theories of dynamics and persistent caging in a one-dimensional lattice gas. *Proc. Natl. Acad. Sci. U.S.A.* **2009,** *106*, 15142-15147.

Awards:

2013 – 2015	Croucher Postdoctoral Fellowship, Hong Kong
2011	Annual Reviews Prize in Physical Chemistry, Stanford
2006 – 2009	Stanford Graduate Fellowship, Stanford
2006	Paul Flory Award, Stanford
2005	Achievement in Chemistry, ACS Maryland Section
2005	Merck Award in Organic Chemistry, Towson
2005	Floyd Blankenship Memorial Award in Physical Chemistry, Towson
2005	College of Science of Mathematics Summer Research Grant, Towson
2005	Towson University Undergraduate Research Grant, Towson
2004	American Institute of Chemists Student Award, Towson
2004	Tutor of the Year, Towson
2004	The Ronald and Linda Raspet Scholarship Endowment, Towson
2003	Freshman Chemistry Achievement, Towson
2001 – 2005	Dean's List, Towson

"The participants clearly showed that doing science is fun. They were creative with their knowledge learned at school and (limited) resources. They also had a very good understanding of lab safety and were great at explaining the principles. I cannot wait to see their creations again once they have learned even more science at university. The future of Hong Kong will surely benefit from their innovations."

Gavin Chit Tsui （徐哲教授）

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Education Attainment:

2008-2013	Ph.D.	University of Toronto, Canada (supervisor: Prof. Mark Lautens)
2004-2006	M.Sc.	University of Guelph, Canada (supervisor: Prof. William Tam)
2000-2004	B.Sc. (Hons.)	University of Guelph, Canada

Employment History:

Since 2015	Assistant Professor, The Chinese University of Hong Kong
2013–2015	Humboldt-Bayer Postdoctoral Fellow, Max-Planck-Institut für Kohlenforschung, Germany (supervisor: Prof. Benjamin List)
2011	JSPS Visiting Scholar, Kyoto University, Japan (supervisor: Prof. Tamio Hayashi)
2007–2008	Research Chemist (Med. Chem.), Merck & Co., Inc., Canada
2006–2007	Research Associate (Med. Chem.), NPS Pharmaceuticals, Inc., Canada

Research Interests:

Development of efficient and selective methods for synthesising pharmaceutically important molecules. General research directions include asymmetric catalysis,

transition metal-catalyzed/organocatalytic transformations, fluorinated molecules and domino reactions.

Awards:

2016 Thieme Chemistry Journals Award

2013 Humboldt-Bayer Research Fellowship for Postdoctoral Researchers

2013 Boehringer Ingelheim Award of Excellence in Organic or Bio-Organic Chemistry

2011 JSPS Summer Program Fellowship

2009 Alexander Graham Bell Canada Graduate Scholarship (CGS)

2009 Ontario Graduate Scholarship (OGS)

Publications:

1. **Fluoroform-Derived CuCF3 for Trifluoromethylation of Terminal and TMS-Protected Alkynes.** He, L.; Tsui, G. C. *Org. Lett.* **2016**, *18*, 2800-2803.
2. The Organocatalytic Asymmetric Prins Cyclization. Tsui, G. C.; Liu, L.; List, B. *Angew. Chem. Int. Ed* **2015**, *54*, 7703-7706.
3. CH-Activation Reactions in Domino Processes. Tsui, G. C.; Lautens, M., In *Domino Reactions - Concept for Efficient Organic Synthesis*, Tietze, L. F. Ed.; Wiley-VCH: Weinheim, **2014**. (Book chapter)
4. Metal–Ligand Binding Affinity vs Reactivity: Qualitative Studies in Rh(I)-Catalyzed Asymmetric Ring-Opening Reactions. Tsui, G. C.; Dougan, P.; Lautens, M. *Org. Lett.* **2013**, *15*, 2652-2655.
5. Expedient Synthesis of Chiral Oxazolidinone Scaffolds *via* Rhodium-Catalyzed Asymmetric Ring-Opening Reaction with Sodium Cyanate. Tsui, G. C.; Ninnemann, N. M.; Hosotani, A.; Lautens, M. *Org. Lett.* **2013**, *15*, 1064-1067.
6. Rhodium-Catalyzed Enantioselective Nucleophilic Fluorination: Ring Opening of Oxabicyclic Alkenes. Zhu, J.[†]; Tsui, G. C.[†]; Lautens, M. *Angew. Chem. Int. Ed.* **2012**, *51,* 12353-12356. ([†] Equal contributions)
7. One-Pot Synthesis of Chiral Dihydrobenzofuran Framework *via* Rh/Pd Catalysis. Tsui, G. C.; Tsoung, J.; Dougan, P.; Lautens, M. *Org. Lett.* **2012**, *14,* 5542-5545.
8. Rhodium(I)-Catalyzed Domino Asymmetric Ring Opening/Enantioselective Isomerization of Oxabicyclic Alkenes with Water. Tsui, G. C.; Lautens, M. *Angew. Chem. Int. Ed.* **2012**, *51*, 5400-5404.

9. Use of (*Z*)-*β*-(ortho-Fluorobenzenesulfonyl)vinylamines as Novel Synthons in the Synthesis of 1,4-Benzothiazine Derivatives. Tsui, G. C.; Singjunla, Y.; Lautens, M. *Synthesis* **2012**, *44,* 1359-1364.
10. Asymmetric Synthesis of (Triaryl)methylamines by Rhodium-Catalyzed Addition of Arylboroxines to Cyclic *N*-Sulfonyl Ketimines. Nishimura, T.; Noishiki, A.; Tsui, G. C.; Hayashi, T. *J. Am. Chem. Soc.* **2012**, *134*, 5056-5059.
11. Synthesis of Unsymmetrical Polysubstituted Pyridines from *β*-Sulfonylvinylamines via 1-Aza-Allyl Anion Intermediates. Lau, C.; Tsui, G. C.; Lautens, M. *Synthesis* **2011**, 3908-3914.
12. Rhodium(I)-Catalyzed Addition of Arylboronic Acids to (Benzyl-/Arylsulfonyl)acetonitriles: Efficient Synthesis of (*Z*)-*β*-Sulfonylvinylamines and *β*-Keto Sulfones. Tsui, G. C.; Glenadel, Q.; Lau, C.; Lautens, M. *Org. Lett.* **2011**, *13*, 208-211.
13. Linear-Selective Rhodium(I)-Catalyzed Addition of Arylboronic Acids to Allyl Sulfones. Tsui, G. C.; Lautens, M. *Angew. Chem. Int. Ed.* **2010**, *49*, 8938-8941.
14. Regioselective Rhodium(I)-Catalyzed Hydroarylation of Protected Allylic Amines with Arylboronic Acids. Tsui, G. C.; Menard, F.; Lautens, M. *Org. Lett.* **2010***, 12,* 2456-2459*.*
15. Invention relates to biaryl piperidine-based renin inhibitor compounds, and their use in treating cardiovascular events and renal insufficiency (Merck & Co.). WO2010114978 (A1). Publication date: 2010-10-07. (Patent)