

## Curriculum Vitae

### A) Personal Data

Name - Professor Chi-Ming Che  
Date of Birth - September 7, 1957  
Place of Birth - Hong Kong  
Marital Status - Married  
Present Post - Dr. Hui Wai-Haan Chair of Chemistry, The University of Hong Kong  
**H-Index 89 (May 2014)**

#### ***Research Interests***

Inorganic and Organic Synthesis, Metal catalysed Organic Transformations, Organometallic and Inorganic Photochemistry, Electron Transfer Reactions in Biological Systems, Chiral Metal Catalysts, Asymmetric Organic Oxidations, Green Oxidations, Carbon-Hydrogen Bond Activation and Functionalization, Highly Reactive Metal-Carbon, Metal-Oxygen and Metal-Nitrogen Multiple Bonded Complexes, Luminescent Molecular Materials, Self-Assembled Nanostructured Materials and Coordination Polymers, Bioinorganic Chemistry, and Inorganic Medicines.

#### ***Summary of Publications***

About 900 ISI papers including: *Journal of the American Chemical Society* (56), *Angewandte Chemie International Edition* (38), *Chemical Communications + Journal of the Chemical Society Chemical Communications* (133), *Chemistry - A European Journal* (55), *Dalton Transactions + Journal of the Chemical Society Dalton Transactions* (114), *Inorganic Chemistry* (77), *Organometallics* (20), *Chemistry - An Asian Journal* (27), *Organic Letters* (27), *Chemical Science* (17), *Journal of Organic Chemistry* (14), *Advanced Materials* (10), *Applied Physics Letters* (14), *Coordination Chemistry Reviews* (9), *Accounts of Chemical Research* (1), *Proteomics* (6), *Cancer Research* (4), *International Journal of Cancer* (2), *British Journal of Cancer* (1), *Chemical Society Reviews* (1), and *Cancer* (1).

Twenty papers were highlighted as Front Cover, including *Chemistry – A European Journal* (7), *Chemistry – An Asian Journal* (2), *Chemical Society Reviews* (1), *Angewandte Chemie International Edition* (1), *Journal of the American Chemical Society* (1), *Chemical Communications* (3), *Inorganic Chemistry* (1), *Organic & Biomolecular Chemistry* (2), *Chemical Science* (1), and *Dalton Transactions* (1).

Ten papers were highlighted as Inside Cover, including *Chemistry – A European Journal* (3), *Angewandte Chemie International Edition* (2), *Chemical Communications* (3), and *Chemical Science* (1).

Four papers were highlighted as Back Cover - *Angewandte Chemie International Edition* (1), *Chemical Communications* (1), *Chemical Science* (1), and *Advanced Materials* (1).

***Summary of Citations (ISI)*** – He is a listed ISI Highly Cited Researcher with over 28900 citations excluding self-citations and his current H-index is 89 (up to May 13, 2014). As up to May 13, 2014, 78 papers each with over 100 citations.

### B) Education Background

1975–1978 - B.Sc. (First Class Honour), The University of Hong Kong.  
1978–1980 - Ph.D. in Inorganic Chemistry, The University of Hong Kong.  
(Supervisor: Professor Chung-Kwong Poon).  
1980–1983 - Research in Organometallic Photochemistry and Bioinorganic Chemistry, California Institute of Technology.  
(Supervisor: Professor Harry B. Gray).

### C) Academic and Working Experience

- Member
- American Chemical Society
  - Royal Society of Chemistry
  - Advisory Committee, Institution of Chemistry, Academia Sinica, Taiwan, 1994–1997
  - **Chinese Academy of Sciences, China (elected in 1995). (The first Hong Kong citizen elected to Chinese Academy of Sciences)**
- Fellow
- The Royal Society of Chemistry
  - The Academy of Sciences for the Developing World (TWAS)
  - Federation of Asian Chemical Societies
  - **Foreign Fellow of National Academy of Sciences, USA (elected in 2013)**
- Lecturer
- The University of Hong Kong, August 1983–August 1990
- Reader
- The University of Hong Kong, September 1990–October 1992
- Chair Professor
- The University of Hong Kong, November 1992–present
- Visiting Professor
- Chemistry Department, National Taiwan University, July 1990 to June 1994
  - Jilin University, China (1996)
  - Sun Yat-Sen University (2004–2007)
- Honorary Professor
- Institute of Photographic Chemistry, Chinese Academy of Sciences, China (1997)
  - State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Chemistry, Chinese Academy of Sciences, China (1996)
  - Huazhong University of Science and Technology (1999)
  - Northeast Normal University (2002)
  - Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China (2012)
- Professor
- Chemistry Department, Nanjing University, China (1996–present)
  - Chemistry Department, Nankai University, China (1996)
  - Chemistry Department, Tsing Hua University, China (2009–2012)
- Guest Professor
- Peking University, China (1996)
- Director
- HKU-CAS Joint Laboratory on New Materials, The University of Hong Kong (2001–present)
  - State Key Laboratory of Synthetic Chemistry, The University of Hong Kong (2011–present)
- Visiting Research Associate
- California Institute of Technology, Summer Vacations of 1984–1988
- Visiting Scientist
- Invited by National Science Council of Taiwan and hosted by National Taiwan University, July–August of 1989 and April 2009
  - National Research Council of Italy (2004)
- Editor-in-chief
- *Advances in Transition Metal Coordination Chemistry*, JAI
- International Advisory Editorial Board Member
- *Journal of the Chemical Society, Dalton Transactions* (1998–2002)
  - *New Journal of Chemistry* (1998–2000)
  - *European Journal of Inorganic Chemistry* (2001–2006)
  - *Chemistry – A European Journal* (2001–present)
  - *Chemistry – An Asian Journal* (2006–present)
  - *Inorganic Chemistry* (2012–present)
  - *ChemCatChem* (2009–present)
  - *Journal of Inorganic Biochemistry* (2009–present)
  - *Chemical Science* (2010–present)
  - *ChemPlusChem* (2011–present)

- *Chemical Communications* (2013–present)
- *Inorganic Chemistry* (2013–present)
- *Coordination Chemistry Reviews* (2014–present)

#### D) University Administration

- [1] **Member of Academic Development Committee** (1.7.1994–30.6.1997)
- [2] **Member of University Research Committee** (1.7.2000–31.7.2014)
- [3] **Deputy Chairman of University Research Committee** (2004–2014)
- [4] **Member of Board of the Appointment of Professors and Readers** (1.11.1992–21.6.2005)
- [5] **University Selection and Promotion Committee** (1.1.2005–30.6.2013)
- [6] **Chairman of Promotion and Tenure Committee of Faculty of Dentistry** (till June 2012)
- [7] **Member of the Search Group for the 15th Vice-Chancellor of The University of Hong Kong**
- [8] **Chairman of the Committee on the Selection of Outstanding Research Awards** (2011–2014)
- [9] **Vice-Chancellor's Advisory Committee on China Affairs** (4.4.2001–31.5.2003)
- [10] **Committee on Higher Doctorates** (1.12.1999–30.6.2003)
- [11] **Convenor of the University Research Committee Strategic Research Theme on Drug** (2009–2015)

#### **Others**

- Involved in planning of new chemistry building, four-year degree program, and in advanced level entrance examination
- Committee on Research and Conference Grants (10.1992–30.6.1994)
- Hung Hing-Ying Physical Sciences Research Fund, Committee of Management (1.7.1994–30.6.1998)
- Member of Committee on the Selection of Senior Teachers (1.1.1994–31.12.1995, 1.1.2000–31.12.2002)
- Committee of Enquiry into Possible Good Cause (1.5.1996–30.6.1998)
- Disciplinary Committee (1.7.1997–30.6.1998; 1.7.2002–30.6.2003)
- Institute of Molecular Biology Supervisory Board (18.9.2000–11.7.2005)
- Committee for the Selection of Professional and Administrative Staff (1.1.2003–30.6.2003)
- Senate Member (1993–2003)
- Board of the Faculty of Science
- Chairman of Departmental Research Postgraduate Committee (DRPC) of the Chemistry Department
- Departmental Promotion and Tenure Committee
- Committee for the MSc in Materials Science
- Committee on Personnel Matter of Non-academic Staff
- Committee for the Selection and Academic Retitling of Assistant Professors
- SPACE Committee
- Teaching Improvement Committee
- Chairman of the Task Force on China Collaboration
- Chairman of the Departmental Academic Committee for Promotion and Tenure

#### E) Awards and Honor

- [1] 1994 State Natural Science Award of China (The 3<sup>rd</sup> Class Prize)
- [2] 1995 **Elected to Member of Chinese Academy of Sciences, China**

- [3] 1997 Croucher Senior Fellowship Award from the Croucher Foundation of Hong Kong
- [4] 1997 Chung-Hsing S&T Lecturership, Taiwan
- [5] 2000 Distinguished Research Achievement Award honored by The University of Hong Kong
- [6] National Outstanding Young Scholar Award, The National Science Foundation of China, 2000–2003
- [7] IUF Invited Professorship, France
- [8] 2003 Federation of Asian Chemical Societies (FACS) Foundation Lectureship Award
- [9] 2004 Visiting Scientist Award of National Research Council of Italy
- [10] Admitted to Fellow of The World Innovation Foundation
- [11] 2005 Admitted to Fellow of Federation of Asian Chemical Societies
- [12] Listed as ISI Highly Cited Researcher by ISIHighlyCited.com
- [13] Ranked 21<sup>st</sup> in a list of the world's top 40 most cited authors for their papers published in the widely-read journal *Chemical Communications* between 1965 and 2004; interviewed by *Chemical Communications*
- [14] 2006 TWAS Prize in Chemistry from the Academy of Sciences for the Developing World
- [15] Pfizer Lectureship at the Sixth International Symposium for Chinese Organic Chemists (ISCOC-6) and Ninth International Symposium for Chinese Inorganic Chemists (ISCIC-9)
- [16] **The First Class Prize of the State Natural Science Award of China**
- [17] 2007 **Seaborg Lectureship at the University of California at Berkeley**
- [18] Prize of Ho Leung Ho Lee (HLHL) Foundation for Scientific and Technological Progress
- [19] Elected to Fellow of the Academy of Sciences for the Developing World (TWAS)
- [20] 2008 Leader of the Year 2007 Prize, Hong Kong SAR.
- [21] **Julia S. and Edward C. Lee Lectureship at University of Chicago**
- [22] 2009 Admitted as Fellow of The Royal Society of Chemistry
- [23] HKU Science Distinguished Alumni
- [24] KC Wong Education Foundation Lecturership
- [25] 2010 Nanqiang Lecturership at Xiamen University
- [26] 2011 Fudan Advisory Professorship at Fudan University
- [27] 2013 Centenary Prize of the Royal Society of Chemistry
- [28] **Elected as Foreign Fellow of National Academy of Sciences, USA**
- [29] **Davison Lectureship at Massachusetts Institute of Technology**

#### F) Lecturerships

- [1] Chung-Hsing S&T Lecturership, Taiwan, April 23, 1997
- [2] Federation of Asian Chemical Societies (FACS) Foundation Lectureship Award 2003; “Phosphorescent Metal-Organic Compounds. From Electron Transfer Reactions in Biological Systems to New Molecular Materials for Organic Optoelectronics”, “Supported Ruthenium Catalysts for Organic Synthesis”, Award lecture presented at the 10th Asian Chemical Congress, Hanoi, Vietnam, October 21–23, 2003
- [3] Pfizer Lectureship at the Sixth International Symposium for Chinese Organic Chemists (ISCOC-6) and Ninth International Symposium for Chinese Inorganic Chemists (ISCIC-9), “Reactive Ruthenium-Ligand Multiple Bonded Complexes for Atom and Group Transfer Reactions”, December 17–20, 2006 in Singapore

- [4] Keynote Lecture at the Dalton Discussion 10: Applications of Metals in Medicine and Healthcare, “Some uses of transition metal complexes as anti-cancer and anti-HIV agents”, September 3–5, 2007 at Durham University, UK
- [5] **2007 Seaborg Lectureship at the University of California at Berkeley**
- [6] Distinguished Chinese Scientists Lecture on “Green Chemistry”, October 25–27, 2007 at Science Museum, Hong Kong SAR, China
- [7] **2008 Julia S. and Edward C. Lee Lectureship at University of Chicago**
- [8] Lecturership at The Forum for the 60<sup>th</sup> Anniversary Celebration of Dalian Institute of Chemical Physics, “Selective Alkane Activation and Aerobic Oxidations with Practical Interest”, May 4, 2009, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China
- [9] Inorganic Chemistry Forum Lecture, “Anti-Cancer and Anti-Viral Transition Metal Complexes”, September 24, 2009, Institute of Inorganic Chemistry, Peking University, Beijing, China
- [10] Molecular Sciences Forum Lecture Professorship of Center for Molecular Science and Chinese Chemical Society, September 25, 2009, China: Lecture at Institute of Chemistry, Chinese Academy of Science, “The Unique phosphorescent planar metal complexes. From photocatalysis to material science applications and medicines”, September 25, 2009, China
- [11] 2009 KC Wong Education Foundation Lecturership
- [12] Nanqiang Lecturership at Xiamen University “Self-Assembled Molecular Functional Materials Directed by Metal-Metal Interactions and Metal-Ligand Coordination”, September 16–18, 2010, China
- [13] Fudan Advisory Professorship at Fudan University, “Green Chemistry: Iron Catalyzed Atom and Group Transfer Reactions”, June 27, 2011, Shanghai, China
- [14] **2013–2014 Davison Lectureship at Massachusetts Institute of Technology**

**G) Plenary and Keynote Lectures**

- [1] **Plenary Lecture at the 30<sup>th</sup> International Conference on Coordination Chemistry, “Metal-Ligand Multiple Bonds. Oxo, Imido and Nitrido Complexes of Ruthenium and Osmium”, held in Kyoto, Japan, July 25–29, 1994.**
- [2] Plenary Lecture at the Hong Kong International Symposium on Heterocyclic Chemistry (organised under the auspices of the International Society of Heterocyclic Chemistry), “Metal Complexes of Heterocyclic Ligands for Organic Synthesis and Photochemical Reactions”, held in Hong Kong, August 13–16, 1995.
- [3] Plenary Lecture at World Chinese Workshop on Applied Chemistry to give a one hour lecture, “Ruthenium Catalysed Organic Oxidation, Alkene Cyclopropanation, and Alkene Aziridination”, held in Hangzhou, China, September 10–13, 1995.
- [4] Keynote Lecture at the Fifth Eurasia Conference on Chemical Sciences, “Oxo and Imido Complexes of Ruthenium for Catalytic and Asymmetric Oxidation and Aziridination of Alkenes”, held in Guangzhou, China, December 10–14, 1996.

- [5] Keynote Lecture at The First International Symposium on Inorganic Chemistry for Chinese Scientists, “Luminescent Metal Complexes with Metal-Metal and Ligand-Ligand Interactions”, held in Hong Kong, July 14–19, 1996.
- [6] Plenary Lecture at the 3rd National Meeting of Coordination Chemistry, held in Xi’an, China, September 1997.
- [7] Keynote Lecture at Symposium “New Trends in Catalytic Oxidations”, held in Osaka University, Japan, December 1–5, 1997.
- [8] **Plenary Lecture at the 9th International Symposium on Novel Aromatic Compounds, organised by IUPAC, “Chiral ruthenium-oxo and imido porphyrin complexes for asymmetric oxidations and aziridinations”, held in Hong Kong, August 2–7, 1998.**
- [9] Keynote Lecture at the XIXth IUPAC International Conference on Organometallic Chemistry (XIX ICOMC), “Ruthenium-Carbon Multiple Bonded Complexes containing Macrocyclic Tertiary Amine and Porphyrin Ligands”, held in Shanghai, China, July 23–28, 2000.
- [10] Plenary Lecture at The Third Conference for Worldwide Chinese Young Chemists, “Inorganic Photochemistry: Past, Present, and Future”, held in Xiamen, China, December 20–23, 2000.
- [11] **Plenary Lecture at the 15<sup>th</sup> International Symposium on Photochemistry and Photophysics of Coordination Compounds (ISPPCC), “Structural and Spectroscopic Evidence for Weak Metal-Metal Interactions and Metal-Substrate Exciplex Formation”, held at The University of Hong Kong, July 4–9, 2004.**
- [12] Plenary Lecture at the International Symposium on Catalysis and Fine Chemicals 2004 (C&FC 2004), “Ruthenium Porphyrin Catalysts for Organic Synthesis”, held at The Hong Kong Polytechnic University, December 12–15, 2004.
- [13] Plenary Lecture at 第一屆納米與生物交流科學研討會－青島, “*Functional Molecular Materials. From Nanomedicine to Field-Effect Transistors*”, held in Qingdao, China, May 4–7, 2005.
- [14] Plenary Lecture at the 4<sup>th</sup> National Conference on Chemical Biology and International Symposium on the Interdisciplinary Science of Chemistry with Biology and Medicine, held in Wuhan, China, October 9–12, 2005.
- [15] Plenary Lecture at the 7<sup>th</sup> National Conference of Chinese Chemical Society on Inorganic Chemistry, “Self-Assembled Functional Molecular Materials for Optoelectronic Applications”, held at Hohhot, Inner Mongolia, China, July 18–22, 2007.
- [16] **Keynote Lecture at the Dalton Discussion 10: Applications of Metals in Medicine and Healthcare, “Some uses of transition metal complexes as anti-cancer and anti-HIV agents”, held at Durham University, UK, September 3–5, 2007.**
- [17] Keynote Lecture at The First Asian Conference on Coordination Chemistry, “Luminescent Platinum(II) Complexes. Photophysical Properties and Materials Science Applications”, held at Okazaki, Japan, July 29–August 2, 2007.
- [18] Plenary Lecture at The 9<sup>th</sup> Conference on Biological Inorganic Chemistry of the Chinese Chemical Society, “Some uses of transition metal complexes as anti-cancer and anti-HIV agents”, held in Guilin, China, October 19–22, 2007.

- [19] Keynote Lecture at 2007 International Conference on Nanotechnology & Advanced Materials, “Research on Nano-structured Materials at HKU-CAS Jointed Laboratory on New Materials: Applications in Organic Optoelectronics and Biomedical Sciences”, held in Hong Kong, China, December 11–13, 2007.
- [20] Keynote Lecture at International Workshop on Green Chemistry, “Ruthenium-Catalyzed Organic Oxidation Reactions with Dioxygen or Hydrogen Peroxide as Terminal Oxidant”, held at The City University of Hong Kong, Hong Kong, April 28, 2008.
- [21] Symposium Keynote Speaker at the Fifth International Conference on Porphyrins and Phthalocyanines (ICPP-5), “Metalloporphyrin Catalyzed Functionalization of C-H Bonds and Activation of Dioxygen for Practical Organic Catalysis”, held in Moscow, Russia, July 6–11, 2008.
- [22] **Plenary Lecture at 38<sup>th</sup> International Conference on Coordination Chemistry (ICCC38), “The unique phosphorescent square planar metal complexes from photocatalysis, materials science applications to medicines”, held in Jerusalem, Israel, July 20–25, 2008.**
- [23] Keynote Speaker and Organic program committee at 14th International Workshop on Inorganic and Organic Electroluminescence & 2008 International Conference on the Science and Technology of Emissive Displays and Lighting, “New OLED Materials Technologies for Displays, Illumination and Backlighting”, held in Rome, Italy, September 9–12, 2008.
- [24] Keynote Lecture at Tateshina Conference on Organic Chemistry, “Atom and Group Transfer Catalysis with Reactive Metal-Ligand Multiple Bonded Complexes”, held in Nagano, Japan, November 7–9, 2008.
- [25] Keynote Lecture at The 4<sup>th</sup> Asian Biological Inorganic Chemistry Conference (AsBic IV) “Medicinal Applications of Transition Metal-Based Coordination Complexes”, held in Jeju, Korea, November 10–13, 2008.
- [26] Keynote Lecture at Frontier in Inorganic Chemistry, “Anti-Cancer and Anti-viral Transition Metal Complexes”, held at The Hong Kong Polytechnic University, November 28, 2008.
- [27] **Plenary Lecture at Inorganic Chemistry Conference IC08, “Atom and Group Transfer Catalysis with Reactive Metal-Ligand Multiple Bonded Complexes”, held at University of Canterbury, Christchurch, New Zealand, December 14–18, 2008.**
- [28] Plenary Lecture at The 8<sup>th</sup> International Conference on Optical Probes of Conjugated Polymers and Organic Nanostructures, “Functional Supramolecular Nanostructures Self-assembled from Organometallic Complexes: Properties and Applications”, held in Beijing, China, June 6–10, 2009.
- [29] Plenary Lecture at The 6<sup>th</sup> National Organic Chemistry Conference, “Gold catalysed Organic Transformation Reactions”, held in Xi’an, China, August 17–20, 2009.
- [30] Plenary Lecture at the 5<sup>th</sup> National Conference on Physical Inorganic Chemistry, “Self-Assembled Functional Metal Coordination Polymers and Nanostructures Directed by Metal-Metal Interactions and Metal-Ligand Bonding”, held in Shantou, China, September 20–23, 2009.
- [31] **Plenary Lecture at The 2<sup>nd</sup> Asian Conference on Coordination Chemistry, “Photophysical properties, photocatalysis, and material science applications of phosphorescent platinum(II) complexes”, held in Nanjing, China, November 1–4, 2009.**
- [32] Plenary Lecture at 6<sup>th</sup> Singapore International Chemical Conference (SICC 6), “Phosphorescent Square Planar Metal Complexes”, held in Singapore, December 15–18, 2009.

- [33] Keynote Lecture at the Sixth International Conference on Porphyrins and Phthalocyanines (ICPP-6), "Selective Functionalization of Alkanes Catalyzed by Metalloporphyrin Complexes", held in New Mexico, USA, July 4–9, 2010.
- [34] Plenary Lecture at The 16th National Symposium on Organometallic Chemistry (NSOC-2010), held in Wenzhou, China, October 22–25, 2010.
- [35] Plenary Lecture at International Symposium on Activation of Dioxygen and Homogeneous Catalytic Oxidation, "Practical Organic Oxidation Using Iron Catalysts and Photogenerated Singlet Oxygen", held in Okinawa, Japan, July 3–8, 2011.
- [36] Plenary Lecture at The 16<sup>th</sup> IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis (OMCOS 16), "Practical Iron Catalyzed Atom and Group Transfer and Insertion Reactions", held in Shanghai, China, July 24–28, 2011.
- [37] Plenary Lecture at International Workshop on Organic Composite Optoelectronic Materials and Devices, "Self-Assembled Molecular Functional Materials" held in Weihai, China, August 4–8, 2011.
- [38] Keynote Lecture at 3<sup>rd</sup> Asian Conference on Coordination Chemistry (ACCC3), "Homoleptic Metal-containing Self-assembled Coordination Polymers", held in New Delhi, India, October 17–20, 2011.
- [39] Plenary Lecture at 12th International Symposium for Chinese Organic Chemists (ISCO) and 9th International Symposium for Chinese Inorganic Chemists (ISCIC), "Closed Shell Metal-Metal Interaction of d<sup>8</sup> and d<sup>10</sup> Metal Ions. From Bonding to Spectroscopy and Applications", held at Lanzhou, China, August 19–22, 2012.
- [40] Plenary Lecture at 两岸三地高分子液晶态与超分子有序结构学术研讨会, "Materials Self-Assembled Supramolecular Molecular", held at Hunan, China, August 27 – 29, 2012.
- [41] Plenary Lecture at 1st International Symposium of C–H Activation, "Metal-Atom/Group Transfer Reactions for C–H Bond Functionalization. From Chemical Bonding to Practical Organic Synthesis", held at Beijing, China, October 5–8, 2012.
- [42] Plenary Lecture at 6th National Conference on Physical Inorganic Chemistry, "Long-Lived Emissive Electronic Excited States. Excited State Dynamics and Applications", held at Tianjin, China, October 13–15, 2012.
- [43] Plenary Lecture at 13<sup>th</sup> National Symposium on Homogeneous Catalysis, "Practical Iron Catalyzed Oxidative Transformation Reactions", held at Suzhou, China, September 25–28, 2013.
- [44] Keynote lecture at 4<sup>th</sup> Asian Conference on Coordination Chemistry, "Phosphorescent Metal Complexes of Gold(III), Palladium(II) and Platinum(II) with Strongly Emissive, Long-Lived Triplet Excited States", held at Jeju, South Korea, November 4–7, 2013.

## H) Invited Lectures

- [1] Invited Speaker (Travel Expenses sponsored by the Organizer) at General Telephone Electric Laboratories Incorporated, USA, December 1985.
- [2] **Invited Speaker (with honorarium) to give a 30–40 minute lecture at the Annual Industrial Associate Conference on Oxidation Chemistry held at California Institute of Technology, February 1986.**

- [3] Invited Speaker (with honorarium) to give an one-hour lecture at the International Symposium on Chemistries of Macrocyclic Complexes held at the Institute for Molecular Science Okazaki, Japan, March 1989.
- [4] **Invited Speaker (with honorarium) to give a 30-40 minute lecture at the Symposium on Atom Transfer Reactions, National Meeting of American Chemical Society, held in Dallas, USA, April 1989.**
- [5] Honorary Speaker invited by the National Science Council of Taiwan to deliver a 30–40 minute lecture at the Annual Chemistry Meeting of Taiwan, 1990.
- [6] Invited Speaker (with honorarium) to give a 45 minute lecture on “Oxidation of Alkanes by Ruthenium-Oxo Complexes” at the Petrochemistry Division of National Meeting of American Chemical Society held in Boston, USA, April 1990.
- [7] Invited Speaker (with honorarium) to give a 30 minute lecture at the EuroAsian Meeting held in Seoul, Korea, April 1990.
- [8] Invited Speaker (with honorarium) to give an one-hour lecture at the Florida Catalysis Conference organised by the American Chemical Society held in Florida, USA, April 1991.
- [9] Invited (with honorarium) by the Arco Chemical Company, USA, to deliver a lecture at the Arco Chemical Company, October 1991.
- [10] Invited Speaker (with honorarium) to deliver a 30 minutes lecture “Molecular design for Photo-Redox Reactions and Organic Oxidation” at the International Symposium on Inorganic and Organic Chemistry in Commemoration of the 60<sup>th</sup> Anniversary of the Chinese Chemical Society held at National Taiwan University, Taiwan, November 20–23, 1992.
- [11] Invited Speaker (with honorarium) to deliver a 60 minutes lecture “The Redox Reactions of Nitrido and Imido Complexes of Ruthenium and Osmium” at the 3rd CBM International Symposium on Biofunctional Molecules held at Pohang Institute of Science and Technology, Korea, November 21–24, 1992.
- [12] Invited Speaker (with honorarium) to deliver a 30–40 minutes lecture at the 3rd Eurasia conference on Chemical Sciences held in Bangkok, December 14–18, 1992.
- [13] Invited Speaker to deliver a 30 minutes lecture on “Donor-Acceptor Supramolecular Platinum Complexes. Synthesis and Photoluminescent Studies” at the 10th International Symposium of Photochemistry and Photophysics of Coordination Compounds held in Sendai, Japan, July 25–30, 1993.
- [14] Invited Speaker (with honorarium) to deliver a 40 minutes lecture “Hydrocarbon Oxidation and Alkene Epoxidation by Ruthenium and Manganese Complexes” at the 34th IUPAC Congress held in Beijing, China, August 15–20, 1993.
- [15] Invited Speaker of the First and Second Annual Scientific Conferences and Annual General Meeting organised by Hong Kong Institution of Science, 1993 and 1994.
- [16] Invited Speaker (with honorarium) to deliver a 30 minute lecture at the 3rd Japan-Sino Binational Symposium on Photochemistry held in Osaka, Japan, October 26–29, 1994.

- [17] Invited Speaker at the Inorganic Photochemistry Symposium at the 1995 International Chemical Congress of Pacific Basin Societies organised by the American Chemical Society, December 17–22, 1995.
- [18] Invited Speaker at the 23rd International Symposium on Macrocyclic Chemistry held in Hawaii, June 7–12, 1998.
- [19] Invited Speaker at the Xiangshan Science Conference on Supramolecular Systems held in Beijing, China, October 16–21, 1998.
- [20] Invited Speaker to give a 30 minute lecture “Luminescent Metal-Organic Compounds for Molecular Recognitions and Blue Light Emitting Diode Devices” at the 2nd SANKEN International Symposium held in Osaka, Japan, January 26–27, 1999.
- [21] Invited Speaker to give a 30 minutes lecture “Luminescent Transition Metal Compounds as Advanced Materials for Light Emitting Diodes” at the Asia-Pacific Symposium on Organic Electroluminescent Materials and Devices in Hong Kong, June 8–11, 1999.
- [22] Invited Speaker to give a 30 minutes lecture on “The Fascinating Gold(I) Photoluminescence” at the 2nd Asian Photochemistry Conference held in Seoul, Korea, June 28–July 1, 1999.
- [23] Invited Speaker at the Int’l Symposium on Photonics & Applications held in Singapore, November 29–December 3, 1999.
- [24] Invited Speaker at the 8th International SPACC Symposium-Chemistry for Selective Reactions-Coordination Chemistry in Harmony with Other Fields of Chemistry, “Ruthenium porphyrins as a new class of catalysts for organic synthesis”, held in Beijing, China, October 17–19, 2001.
- [25] Invited Speaker of Singapore International Chemical Conference (II). Frontiers in Chemical Design and Synthesis, “Reactive iron, ruthenium and osmium-carbene complexes for carbon-carbon bond formation reactions”, Singapore, December 18–20, 2001.
- [26] Invited Speaker at the Chinese Academy of Sciences Mainland – Hong Kong Academicians Forum held in Hong Kong, May 24–25, 2002.
- [27] Invited Speaker at the 2nd International Conference on Porphyrins and Phthalocyanines, “Chiral Ruthenium-Oxo, Imido and Carbene Complexes with Porphyrin Ligands for Enantioselective Carbon-Oxygen, Carbon-Nitrogen and Carbon-Carbon Bond Formations”, held in Kyoto, Japan, June 30–July 5, 2002.
- [28] Invited Speaker at the XIXth IUPAC Symposium on Photochemistry, “Luminescent Platinum(II) Complexes with Cyclometalated and Aromatic Diimine Ligands: Photophysical Studies and Applications”, held in Budapest, Hungary, July 14–19, 2002.
- [29] Invited Speaker at the Taiwan Bioinorganic Chemistry Symposium 2003, “Ruthenium-Catalyzed C–H Bond Functionalization”, held in Hsinchu, Taiwan, October 2–4, 2003.
- [30] Invited Speaker at the Third International Conference on Porphyrins and Phthalocyanines, “Ruthenium Porphyrin Catalysts for Organic Synthesis”, held in New Orleans, USA, July 11–16, 2004.
- [31] Invited Speaker at the First Chemistry Week of Changchun, “Bioinspired Organic Catalysis”, held in Changchun, China, August 9, 2004.
- [32] Invited Speaker at the International Symposium on Chemicals and Pharmaceuticals, “Bioinspired Organic Catalysis”, held in Guangzhou, China, December 16–18, 2004.

- [33] Invited Speaker [a 35-minute lecture] at the 229<sup>th</sup> American Chemical Society National Meeting, Symposium on Frontiers in Inorganic Spectroscopy and Photochemistry, “Luminescent Platinum(II) Materials. Spectroscopic Characterization of Metal-Metal-to-Ligand and Ligand-to-Ligand Charge Transfer Excited States and Sensory Materials Applications”, held at San Diego, US, March 13–17, 2005.
- [34] Invited Speaker at the National Conferences of Coordination Chemistry and Bioinorganic Chemistry, “Metal-Carbon Multiple Bonded Complexes: Bondings, Catalysis and Materials Science Applications”, held in Sun Yat-Sen University, Guangzhou, China, November 19, 2005.
- [35] Invited Speaker at the Singapore International Chemical Conference 4 (SICC-4), “Metal-Carbon Multiple Bonded Complexes: Bondings, Catalysis and Materials Science Applications”, held in Shangri-La Hotel, Singapore, December 8–10, 2005.
- [36] Invited Speaker at the 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem 2005), “Neutral luminescent platinum(II) materials with multi-anionic chelating ligands: photophysical studies and applications in high-performance orange and red OLEDs”, held in Honolulu, Hawaii, USA, December 15–20, 2005.
- [37] Invited Speaker at the International Conference on Porphyrins and Phthalocyanines (ICPP-4), “Chiral metalloporphyrin catalysts for Lewis-acid catalyzed organic reactions and oxidative carbon-oxygen and carbon-nitrogen bond formation reactions”, held in Rome, Italy, July 2–7, 2006.
- [38] Invited Speaker at the 6th International Conference on Electroluminescence of Molecular Materials and Related Phenomena (ICEL-6), “Phosphorescent Platinum(II) Materials for Organic Photonics and Nano-Devices”, held in the City University of Hong Kong, August 6–10, 2006.
- [39] Invited Poster Presentation by the 232<sup>nd</sup> American Chemical Society National Meeting, “Bis(pyridyl)allylenylidene Complex of Ruthenium with a Tetradentate Macrocyclic Amine: a “Molecular Clip” that Displays Intense Near Infrared Absorption upon Coordination to Ruthenium(II)”, held in San Francisco, USA, September 10–14, 2006. [Frontiers of Inorganic Chemistry: The Grey Areas]
- [40] Invited Speaker at the Third Asian Biological Inorganic Chemistry Conference (AsBIC-III), “Metalloporphyrins as a New Class of Anti-Cancer Compounds”, held in Nanjing, China, October 30–November 3, 2006.
- [41] Invited Lecture at the 3<sup>rd</sup> Sino-US Symposium on Organic Chemistry, “Reactive Ruthenium Carbenoid Complexes for Group Transfer Reactions”, held in Wuhan, China, Jun 1–2, 2007.
- [42] Invited Lecture at the 234<sup>th</sup> ACS National Meeting Boston on “Functional nanostructured phosphorescent materials driven by weak closed-shell metal-metal interactions and metal-ligand coordination”, held in Boston, USA, August 19, 2007.
- [43] Invited Speaker at Frontiers of Material Chemistry, “Phosphorescent Platinum(II) Materials. Spectroscopy, Photophysical Properties and Materials Science Applications” held at The University of Warwick, UK, September 6, 2007.
- [44] Invited Speaker at ISHC-XVI International Symposium on Homogeneous Catalysis, “Metal Catalyzed Oxidation of Organic Compounds with Dioxygen or Hydrogen Peroxide as Terminal Oxidant”, held in Florence, Italy, July 6–11, 2008.

- [45] Invited Speaker at 2008 Materials Research Society Fall Meeting, “Self-Assembled Functional Molecular Materials for Optoelectronic Applications”, held at Boston, USA, December 1–5, 2008.
- [46] Invited Speaker at Envonik Meets Science China 2009 Catalytic Processes, “Ruthenium-catalyzed organic oxidation reactions with oxygen or hydrogen peroxide as terminal oxidant”, held in Shanghai, China, March 20, 2009.
- [47] Invited Speaker at Professor Peng's 60th birthday Symposium, “The unique phosphorescent planar metal complexes. From photocatalysis to materials science applications and medicines”, held in Taiwan, May 30, 2009.
- [48] Invited Speaker at Academia sinica, “Anti-Cancer and Anti-viral Transition Metal Complexes”, held in Taiwan, June 1, 2009.
- [49] Invited Speaker at 6<sup>th</sup> National Conference on Coordination Chemistry, “Self-assembled Metal Coordination Polymers”, held in Hong Kong, July 6–9, 2009.
- [50] Invited Speaker at Frontiers in Chemistry, “Metal-Catalyzed Atom and Group Transfer Reactions for Practical Organic Synthesis”, held in Singapore, July 20–22, 2009.
- [51] Invited Lecture at Tsing Hua University, “Gold Catalysed Organic Transformation Reactions” held in Beijing, China, September 24, 2009 (supported by KC Wong Education Foundation Lecturership).
- [52] Invited Lecture at Technical Institute of Physics and Chemistry (TIPC), “Selective Alkane Activation and Aerobic Oxidations with Practical Interest”, held in China, September 25, 2009 (supported by KC Wong Education Foundation Lecturership).
- [53] Invited Lecture at City University of Hong Kong, “Selective Activation of C-H Bonds by Atom and Group Transfer Reactions”, held in Hong Kong, February 24, 2010.
- [54] Invited Lecture at Molecular Engineering Symposium on Nanostructured Functional Materials for celebrating JLU-PUV (Jilin University-Polytechnic University of Valencia) collaboration, “Self-Assembled Multi-Functional Coordination Polymers”, held at Jilin University, Changchun, China, April 10–11, 2010.
- [55] Invited Lectures at Visiting Hubei Scheme of Famous Scientists, “The unique phosphorescent planar metal complexes. From photocatalysis to materials science applications and medicines” and “Anti-Cancer and Anti-Viral Transition Metal Complexes”, held in Wuhan, China, May 20–23, 2010.
- [56] Invited Lecture at the 6<sup>th</sup> Asian-European Symposium on Metal Mediated Efficient Reactions, “Gold-Catalyzed Reactions”, held in Singapore, June 7–9, 2010.
- [57] Invited Lecture at Gordon Research Conferences: Metals in Medicine (Medicinal Inorganic Chemistry), “Anti-cancer gold complexes”, held at Proctor Academy, Andover, NH, USA, June 27–July 2, 2010.
- [58] Invited Lecture at International Symposium on Advancing the Chemical Sciences: Challenges in Inorganic and Materials Chemistry (ISACS3), “Functional Molecular Materials and Photo-Catalysis with Phosphorescent Square Planar Metal Complexes”, held in Hong Kong, July 20–23, 2010

- [59] Nanqiang Lectureship at Xiamen University, “Self-Assembled Molecular Functional Materials Directed by Metal-Metal Interactions and Metal-Ligand Coordination”, September 16–18 2010, China.
- [60] Special Invited Lecture at The 60th Anniversary Conference on Coordination Chemistry (60CCCCO), “Self-Assembled Molecular Functional Materials”, September 27–30 2010, Osaka, Japan.
- [61] Invited Lecture at UGC AoE on Institute of Molecular Functional Materials Research Symposium, Department of Chemistry, “Phosphorescent Metal Complexes. The Heavy Atom Effect, Materials Science Applications, and Photochemistry”, held at The University of Hong Kong, Hong Kong, November 8–9, 2010.
- [62] Invited Lecture at The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem), “Self-assembled metal coordination polymers and nanostructures by metal-metal and metal-ligand interactions: Functions and structures” in the Area of (2) Inorganic and the Session of Molecular Photonics (#9), held in Honolulu, Hawaii, USA, December 15–20, 2010.
- [63] Invited Speaker at the Molecular Materials Meeting (M3) @ Singapore – An international conference on “Big Ideas in Molecular Materials”, “Self-Assembled Molecular Functional Materials”, held in Singapore, January 10–11, 2011.
- [64] Invited Lecture at Inorganic Chemistry Symposium in National Chung Cheng University, “Practical Iron Catalysed Atom and Group Transfer Reactions”, held in Chiayi, Taiwan, April 29, 2011.
- [65] Lecture at Fudan Advisory Professorship, “Green Chemistry: Iron Catalyzed Atom and Group Transfer Reactions” held at Fudan University, Shanghai, China, June 27, 2011.
- [66] Invited Lecture at The 242<sup>nd</sup> American Chemical Society National Fall Meeting, Division of Polymer Chemistry, Symposium on “Metal-Containing and Metallo-Supramolecular Polymers and Materials”, “Functional supramolecular metal-containing polymeric materials”, held in Denver, USA, August 28–September 1, 2011.
- [67] Invited Speaker at 光电功能有机金属配合物-新结构、新功能与新应用研讨会 held in Changchun, Jilin, China, September 10, 2011.
- [68] Invited Lecture at The 6<sup>th</sup> International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6), “Practical Iron Catalysed C–H Bond Functionalization” held at The Chinese University of Hong Kong, Hong Kong, December 12, 2011.
- [69] Invited Speaker at 2012 NJC Symposium, “Phosphorescent Planar Metal Complexes as Biological Probes and Enzyme Inhibitors” held at The University of Hong Kong, Hong Kong, April 23, 2012.
- [70] Invited Lecture at The 2nd Hong Kong-Munster-Shanghai Joint Trilateral Symposium on Organometallic Chemistry, “Self-Assembled Coordination Polymer” held in Shanghai, China, May 28–29, 2012.
- [71] Invited Lecture at Photoactivatable Metal Complexes: from Theory to Therapy, “Light-Induced Catalytic and Cytotoxic Properties of Phosphorescent Transition Metal Compounds with a  $d^8$  Electronic Configuration”, held in London, United Kingdom, June 18–19, 2012.
- [72] Invited Lecture at Seventh International Conference on Porphyrins and Phthalocyanines (ICPP-7), “Anti-Cancer Gold(III) Porphyrin Complexes”, held in Jeju, South Korea, July 1–6, 2012.

- [73] Invited Lecture at Seventh International Conference on Porphyrins and Phthalocyanines (ICPP-7), “Metalloporphyrin-catalyzed C–H Bond Functionalization”, held in Jeju, South Korea, July 1–6, 2012.
- [74] Lecture at Nankai University, “Metal-Atom/Group Transfer Reactions for C–H Bond Functionalization. From Chemical Bonding to Practical Organic Synthesis”, held at Tianjin, China, September 19, 2012.
- [75] Invited Lecture at UGC AoE on Institute of Molecular Functional Materials Research Symposium, “Long Lived Emissive Excited States. Excited State Dynamics and Applications”, held at Hong Kong, China, November 13–14, 2012.
- [76] Invited Lecture at The 3rd Hong Kong-Munster-Shanghai Joint Trilateral Symposium on Organometallic Chemistry, “Iron-Catalyzed C–H Functionalization” held in Münster, Germany, May 1–2, 2013.
- [77] Invited Lecture at The 20<sup>th</sup> International Symposium on the Photochemistry and Photophysics of Coordination Compounds (ISPPCC 20), “Strongly Emissive Gold(III) and Platinum(II) Complexes with very Long-Lived Excited Emissive States. Molecular Design Studies, Photophysical Properties, and Applications” held in Michigan, USA, July 7–12, 2013.
- [78] Invited Lecture at The 15<sup>th</sup> Asian Chemical Congress (15ACC), “Strongly Emissive Long-Lived Electronic Excited States of Planar Transition Metal Complexes. Photophysics and Applications” held in Sentosa, Singapore, August 19–23, 2013.

#### I) Academic Activities

- [1] Journal Referee - Referee for papers of *Journal of the American Chemical Society*, *Angewandte Chemie International Edition*, *Chemical Communications*, *Chemistry - A European Journal*, *Inorganic Chemistry*, *Journal of the Chemical Society Dalton Transactions*, *New Journal of Chemistry*, *Inorganic Chimica Acta*, *Organic Letters*, *Chemical Reviews*, *Chemical Society Reviews*, *Coordination Chemistry Reviews*
- [2] Proposal Referee - Invited by the National Science Foundation USA to be the research proposal reviewer. Invited by the University and Polytechnic Granting Committee of Hong Kong, Hong Kong Baptist University, Hong Kong Research Grants Council to be the proposal reviewer
- [3] Invited by the National Science Council of Taiwan to be the External/Internal assessor for the award of "Outstanding Performance in Research", years 1988–1990, 1993–1994
- [4] Invited by the National Science Council of Taiwan to be the Visiting Scientist, year 1989
- [5] Invited by the National Taiwan University to be the external assessor for the Promotion of Academic Staffs from Associate Professor to Full Professor, year 1991
- [6] **Appointed Member of Board of Trustees of Nanjing University, China (1997–present)**
- [7] Invited by National Academy of Sciences USA to be a Participant at the 1st Annual Symposium on Chinese-American Frontiers of Science held in California, USA, August 28–30, 1998
- [8] *Organized the The Croucher Advanced Study Institute “Advanced Techniques in Molecular Materials” held at The University of Hong Kong, April 12–16, 1999*  
Invited Speakers included:

- Prof. Tobin J. Marks, “Self-assembly Strategies for Molecule-based Photonic Materials” and “Co-ordination Chemistry and Vapor Phase Routes to Metal Oxide Thin Films”  
 Prof. Mark E. Thompson, “Optoelectronic Properties of Molecular Materials”  
 Prof. A. P. Alivisatos, “Polymer / Nanocrystal Composites”  
 Prof. D. M. Kolb, “The Study of Electrode Surfaces by Scanning Tunnelling Microscopy: From Imaging to Manipulation”  
 Prof. P. Barbara, “Near Field Scanning Optical Microscopy / Spectroscopy and Singles Molecule Spectroscopy of Organic Thin Film Materials”  
 Prof. Yasuo Wada, “Nano-lithography and the Role of Materials”
- [9] Invited by the National Science Council of Taiwan to be an external assessor for the award of Areas of Excellence in Physical, Engineering, and Biological Sciences, 1999
- [10] Invited by the Nobel Committee of Chemistry, The Swedish Academy of Sciences to submit proposal for the Nobel Prize of Chemistry years 2000, 2006–2008
- [11] ***As a Chairman to Organize Frontier Applied Chemistry Research Workshop Series:***  
 (a) Biomimetic and Asymmetric Oxidations (December 16–17, 1996)  
 (b) New Vistas in Inorganic Chemistry (April 19–22, 1998)  
 (c) 21<sup>st</sup> Century Molecular Synthesis and Catalysis (September 26–29, 1999)  
*Distinguished Speakers included:*  
 Prof. J.T. Groves, Prof. Mike Mingos, Prof. Gerard van Koten, Prof. Peter Sadler, Prof. S. I. Murahashi, Prof. J.E. Bercaw, Prof. Carlos Floriani, Prof. S.I. Chan, Prof. Daniel G. Nocera, Prof. R.J. Puddephatt, etc.
- [12] ***As a Chairman to Organize Symposia on Chemical Biology:***  
 (a) Symposium on Chemical Biology and Drug Discovery (December 11, 2001)  
 Industrial R&D participants: Glaxo Wellcome and Arachnova  
 (b) Distinguished Lecture Series on Chemical Biology (March 12–16, 2001)  
 Distinguished Visiting Professor: Prof. Stephen J. Lippard (MIT).
- [13] ***As a Chairman to Organize Symposia on Molecular Technology for Drug Discovery and Synthesis*** (July 19–20, 2001), co-organizer: Hong Kong Polytechnic University  
 (a) Pre-Meeting for the 11<sup>th</sup> IUPAC Symposium on Organometallic Chemistry Directed Towards Organic Synthesis (OMCOS-11)  
 (b) Invited Speakers included: Prof. Tobin Marks, Prof. Tamio Hayashi, Prof. Hung-Wen Liu, Prof. Earl Stadtman, etc.
- [14] ***As a Chairman to Organize the 8th International Symposium on Applied Bioinorganic Chemistry (ISABC8) held at The University of Hong Kong, April 2–5, 2004.***  
 Invited Speakers included:  
 Prof. Ivano Bertini, “Structural Genomics of Metalloproteins”  
 Prof. Yi Lu, “Design and Selection of Metalloenzymes: From Novel Biocatalysts to Selective Biosensors”  
 Prof. Chris Orvig, “Vanadium Complexes as Insulin-Enhancing Agents in the Treatment of Diabetes”  
 Prof. Lawrence Que, “Bio-inspired Hydrocarbon Oxidations by Non-heme Iron Catalysts”  
 Prof. Andrew J. Thomson, “Multi-metal Sites for Biological Catalysis and Control”  
 Prof. Yoshihito Watanabe, “The Construction of Metalloenzymes by Utilizing the Protein Framework of Myoglobin”
- [15] Visiting Scientist of National Research Council of Italy, September 15–25, 2004. Four invited lectures have been delivered:  
 (a) “Structural and Spectroscopic Evidence for Weak Metal-Metal Interactions and Metal-Substrate Exciplex Formation”

- (b) "Phosphorescent Metal-Organic Compounds. From Electron Transfer Reactions in Biological Systems to New Molecular Materials for Organic Optoelectronics"
- (c) "Luminescent Platinum(II) Complexes with Cyclometalated and Aromatic Diimine Ligands: Photophysical Studies and Applications"
- (d) "Bioinspired Organic Catalysis" in the Sacconi Foundation Fall Seminar 2004

[16] Nominated for Japan Prize by The Science and Technology Founction of Japan.

[17]RSC Centurary Prize lecture series, March 5-13, 2014. Three invited lectures have been delivered.

- (a) "Luminescent Metal Complexes with Long-Lived and Emissive Excited States. Photophysics and Applications"
- (b) "Gold Medicines"
- (c) "Metal-Catalyzed Oxidative Alkene and Alkane Functionalization"

## J) **Ph.D. and M.Phil. Students Trained**

Supervisor of more than 160 Ph.D. (130 of which have completed their studies), 14 M.Phil. students (all completed), 2 exchange M.Phil students from Zhongshan University, 1 exchange Ph.D. student from Nanjing University.

### 1) PAST AND CURRENT GRADUATE STUDENTS

#### Ph.D. Students (Completed)

- [1] *Professor Wong Kwok-Yin*, (completed in 1986), Chair Professor, Department of Applied Biology & Chemical Technology, Dean of Faculty of Applied Science and Textiles, Hong Kong Polytechnic University
- [2] Dr. Chung Wai-Cheung (completed in 1987), Senior Chemist at the Government Laboratory, Hong Kong
- [3] *Professor Yam Vivian Wing-Wah* (completed in 1988), Chair Professor, Department of Chemistry, The University of Hong Kong
- [4] Dr. Mak Shing-Tat (completed in 1988), Senior Environmental Protection Officer at the Environmental Protection Department
- [5] Dr. Lee Wai-Man (completed in 1989), Chemist at the Government Laboratory
- [6] Dr. Tang Wai-Tong (completed in 1989), Chemist at the Government Laboratory
- [7] Dr. Leung Wai-Ho (completed in 1989), Environmental Protection Officer at the Environmental Protection Department
- [8] Dr. Cheng Wing-Kin (completed in 1989), Regional Manager (West), Swire Sita Waste Services Limited
- [9] *Professor Leung Wa-Hung* (completed in 1989), Professor at the Department of Chemistry, Hong Kong University of Science and Technology
- [10] Dr. Lee Wai-On (completed in 1989), Senior Chemist at the Government Laboratory
- [11] *Professor Lam Hon-Wah* (completed in 1990), Associate Professor, Department of Biology and Chemistry, City Polytechnic University of Hong Kong
- [12] Dr. Li Chi-Keung (completed in 1991), Chemist at the Government Laboratory
- [13] Dr. Clare Ho (completed in 1992), Senior Chemist at the Government Laboratory
- [14] *Professor Yip Hon-Kay* (completed in 1993), Associate Professor at the Chemistry Department, National University of Singapore, Singapore
- [15] *Professor Li Dan* (completed in 1993), Professor at the Department of Chemistry, Vice President, Shantou University, China
- [16] *Dr. Yeung Chi-Hung* (completed in 1994), Lecturer at the Department of Applied Biology & Chemical Technology, Hong Kong Polytechnic University
- [17] *Dr. Yu Wing-Yiu* (completed 1994), Associate Professor, Hong Kong Polytechnic University
- [18] *Dr. Chan Chin-Wing* (completed 1994), Associate Professor, Opening University of Hong Kong

- [19] *Professor Li Zao-Ying* (completed 1994, Ph.D. of Hong Kong Polytechnic University), Professor at the Chemistry Department, Wuhan University.
- [20] Dr. Cheng Wing-Chi (completed 1995), Chemist at the Government Laboratory
- [21] Dr. Lin Hsiu-Mei, National Taiwan University (completed 1995)
- [22] Dr. Cheng Luk-Kit (completed 1996)
- [23] Dr. Chin Kwok-Fai (completed 1996)
- [24] Dr. Chiu Wing-Hong (completed 1996)
- [25] Dr. Xiao Hong (completed 1996)
- [26] Dr. Ho Kwok-Keung (completed 1996)
- [27] Dr. Cheng Ming-Chuan (Ph.D. of National Taiwan University, completed 1996)
- [28] Dr. Chan Chi-Keung (completed 1997), Deputy Director- Corporate R&D CSTC Standards Technical Services Co., Ltd.
- [29] Dr. Ko Po-Hung (completed 1997)
- [30] Dr. Cheung Tsz-Chun (completed 1997), Chemist at the Government Laboratory
- [31] Dr. Yang San-Ming (completed 1997)
- [32] Dr. Cheng Yuk-Ki (completed 1997), Chemist at the Government Laboratory
- [33] *Professor Liu Heng-Qian* (completed 1997), Professor at the Chemistry Department, Nankai University
- [34] *Professor Tzeng Biing-Chiau* (completed 1997), Professor at the Chemistry Department, National Chung Cheng University
- [35] Dr. Xue Wen-Mei (completed 1997)
- [36] Dr. Lee Fu-Wa (completed 1998)
- [37] Dr. Lo Wai-Cheung (completed 1998)
- [38] Dr. Fung Wai-Hong (completed 1998), Chemist at the Government Laboratory
- [39] Dr. Chan Wing-Han (completed 1998), Chemist at the Government Laboratory
- [40] Dr. Liu Chun-Jing (completed 1998)
- [41] Dr. Cheng Kar-Wai (completed 1998), Chemist at the Government Laboratory
- [42] Dr. Lai Tat-Shing (completed 1998)
- [43] Dr. Lai Siu-Wai (completed 1999)
- [44] Dr. Chan Kwok-Chu (completed 1999), Chemist at the Government Laboratory
- [45] Dr. Au Sze-Man (completed 1999), Environmental Protection Officer
- [46] Dr. Chan Pui-Ming (completed 1999)
- [47] *Professor Zhou Xiang-Ge* (completed 1999), Professor, Department of Chemistry, Sichuan University
- [48] Dr. Tse Man-Chung (completed 2000)
- [49] *Dr. Zhang Rui* (completed 2000), Associate Professor, Department of Chemistry, Western Kentucky University
- [50] *Professor Chao Hsiu-Yi* (completed 2001), Professor, Department of Chemistry, Zhongshan University
- [51] Dr. Leung Ka-Yan (completed 2002), Technical Service Manager at Johnson Matthey Hong Kong Limited
- [52] *Professor Lin Yong-Yue* (completed 2002), Professor, Department of Chemistry, Yunnan Normal University
- [53] Dr. Xia Bao-Hui (completed 2002)
- [54] Dr. Mao Zhong (completed 2003)
- [55] *Dr. Lu Wei* (completed 2003), Associate Professor, Department of Chemistry, South University of Science and Technology of China
- [56] Dr. Zhou Cong-Ying (completed 2003)
- [57] Dr. Liang Jiang-Lin (completed 2004)
- [58] *Dr. Ma Dik-Lung* (completed 2004), Assistant Professor, Department of Chemistry, Baptist University
- [59] Dr. Chan Siu-Chung (completed 2004)
- [60] Dr. Yip Wing-Ping (completed 2004), Laboratory Instructor at The Hong Kong University of Science and Technology
- [61] Dr. Li Yan (completed 2004)

- [62] Professor Sun Wai-Yin (completed 2004), Professor, College of Science, Shantou University
- [63] Dr. Siu Kit-Man (completed 2004)
- [64] *Dr. Yip Ka-Lai* (completed 2004), Chemist at Drainage Department
- [65] *Dr. Wong Chun-Yuen* (completed 2004), Assistant Professor, Department of Biology and Chemistry, City University of Hong Kong
- [66] Dr. Li Gong-Yong (completed 2004, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [67] *Dr. Zhang Jun-Long* (completed 2005), Associate Professor, College of Chemistry and Molecular Engineering, Peking University
- [68] Dr. Kui Chi-Fai (completed 2005)
- [69] Dr. Kwok Chi-Chung (completed 2005)
- [70] Dr. Chen Jian (completed 2005, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [71] Dr. Wong Lai-Ming (completed 2006), Chemist at Government Laboratory
- [72] Dr. Chan Wing-Kei (completed 2006)
- [73] *Prof. Chen Rong* (completed 2006), Professor, Wuhan Institute of Technology
- [74] Dr. Li Jiayin (completed 2006, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [75] Dr. Xu Zhenjiang (completed 2006, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis), Investigator at Shanghai Institute of Organic Chemistry
- [76] Dr. Tsui Wai-Man (completed 2006), Laboratory Instructor at The Hong Kong University of Science and Technology
- [77] Dr. Ng Fei-Yeung (completed 2006)
- [78] Dr. Wong Suk-Yu (completed 2006)
- [79] Dr. Xiang Hai-Feng (completed 2006)
- [80] Dr. Shum Yuen-Ting (completed 2007)
- [81] Dr. Thu Hung-Yat (completed 2007)
- [82] Dr. Liu Yungen (completed 2007)
- [83] Dr. Chan Sau-Han (completed 2007), Lecturer, Department of Chemistry, National University of Singapore
- [84] Dr. Cheung Chi-Chuen (completed 2007)
- [85] Dr. Law Yuen-Chi (completed 2007), Chemist at Drainage Department
- [86] Dr. Xie Jin (completed 2007)
- [87] Dr. Yan Kun (completed 2007)
- [88] Dr. Chu Tsun Tung (completed 2007)
- [89] Dr. Xu Haiwei (completed 2007, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [90] Dr. Liu Yu-Juan (completed 2007, Nanjing University)
- [91] Dr. Li Cheng-Hui (completed 2007, Nanjiang University), Lecturer, Department of Chemistry, Nanjing University.
- [92] Dr. Chan Lai-Fung (completed 2008), Assistant Professor, Hong Kong Polytechnic University
- [93] Dr. Li Ka-Lei (completed 2008)
- [94] Dr. Zhu Ming-Xin (completed 2008)
- [95] Dr. Chan Tak Chung (completed 2008), Chemist at Government Laboratory
- [96] Dr. Choi Kwok-Wai (completed 2008)
- [97] Dr. Jiang Gaoxi (completed 2008, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [98] Dr. Chan Kwok-Wai (completed 2008)
- [99] Dr. Lo Kar-Yan (completed 2009)
- [100] Dr. Wu Peng (completed 2009)
- [101] Dr. Liu Peng (completed 2009)
- [102] *Dr. Xu Zong-Xiang* (completed 2009), Associate Professor, Department of Chemistry, South University of Science and Technology of China
- [103] Dr. Cheng Kam-Ho (completed 2009)

- [104] Dr. Leung Hiu-Chi (completed 2009), Chemist at Government Laboratory
- [105] Dr. Low Kam-Hung (completed 2009)
- [106] Dr. So Man-Ho (completed 2009), Chemist at Government Laboratory
- [107] Dr. Chow Lok-Fung (completed 2010)
- [108] *Dr. Liu Xinyuan* (completed 2010), Associate Professor, Department of Chemistry, South University of Science and Technology of China
- [109] Dr. Wang Mingzhong (completed 2010)
- [110] Dr. Yuen Mei-Yan (completed 2010), Lecturer at the University of Hong Kong
- [111] Dr. Chow Wai-Shan (completed 2010), Chemist at Government Laboratory
- [112] Dr. Yan Jing (completed 2010)
- [113] Dr. Wong Kwok-Ming (completed 2010)
- [114] Dr. Xiao Yaping (completed 2010, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [115] Dr. Shiu Hoi-Yan (completed 2011)
- [116] Dr. Chan On-Yee (completed 2011)
- [117] Dr. Liu Jia (completed 2011)
- [118] Dr. Tang Ho-Wai (completed 2011)
- [119] Dr. Chen Guoqiang (completed 2011, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [120] Dr. To Wai Pong (completed 2012)
- [121] Dr. Kwong Wai Lun (completed 2012)
- [122] Dr. Wang Jingcui (completed 2012, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [122] Dr. Xiao Wenbo (completed 2013)
- [123] Dr. Li Kai (completed 2013)
- [124] Dr. Gu Xin (completed 2013, Shanghai-Hong Kong Joint Laboratory in Chemical Synthesis)
- [125] Dr. Chow Pui-Keong (completed 2013)
- [126] Dr. Wong Yee-Man Melody (completed 2013)
- [127] Dr. Lam Tsz-Lung (completed 2014)
- [128] Dr. Chen Daqing (completed 2014)
- [129] Dr. Zhang Jingjing (completed 2014)
- [130] Dr. Tong Wai-Yip (completed 2014)

#### Ph.D. Students (current)

Ang Wai Hung, Raja Sekarreddy Annapureddy, Chan Ka Ho, Chan Kaai Tung, Chan Wai Man, Chan Yu Man, Chang Xiaoyoung, Cheung Chi Wah, Fong Tsz Him, Fung Sin Ki, Hao Fei, Hu Di, Hung Faan Fung, Ko Man Ying, Kwong Chun Lam, Lam Kar Yee, Law Siu Man, Lee Chi Lun, Lin Wing Shan, Liu Jie, Faisal Mehmood, Ng Yin Ming, Shing Ka Pun, So Kwok Ming, Tian Songhai, Tong Ka Chung, Tsai Lui Lui, Tse Chun Wai, Tso Chi Hang, Wan Pui Ki, Xiao Xinshan, Yang Chen, Yeung Kwan Ting, Zou Taotao

#### M.Phil. Students (completed)

- [1] Mr. Kwong Hoi-Lun (completed in 1989)
- [2] Mr. Wan Kam-To (completed in 1990)
- [3] Miss Brenda Ng Yuk-Yu (completed in 1996)
- [4] Mr. Wong Kar-Ho (completed in 1999)
- [5] Miss Ho Kin-Ying (completed in 1999)
- [6] Miss Choi Mei-Yuk (completed in 1999)
- [7] Mr. Wan Chun-Wai (completed in 2000)
- [8] Miss Lam Hui-Fung (completed 2001)
- [9] Mr. Ma Ji-Xiang, exchange (completed in 1987)
- [10] Miss Ho Li-Yan, exchange (completed in 1988)
- [11] Mr. Lo Wei-Chung, National Taiwan University (completed in 1993)

- [12] Mr. Chen Tai-Yuan, National Taiwan University (completed in 1993)  
[13] Mr. Lee Chun-Yuen, National Taiwan University (completed in 1995)  
[14] Miss Wang Lin (completed 2013)

**K) Research Interests and Research Grants Awarded**

Research Interests

Inorganic and Organic Synthesis, Metal Ions Promoted Organic Transformations, Organometallic and Inorganic Photochemistry, Electron Transfer Reactions in Biological Systems, Chiral Metal Catalysts, Asymmetric Organic Oxidations, Highly Reactive Metal-Carbon Multiple Bonded Complexes, Luminescent Materials, Bioinorganic Chemistry, and Inorganic Medicines

Principal Investigator / Holders of the Following outside Research Grants

**a) The Croucher Foundation**

**2012**, The Croucher Foundation, HK\$ 1,250,000, “Long-Lived Triplet Excited States for Water Oxidation and Carbon Dioxide Reduction”

**2008**, The Croucher Foundation, HK\$ 1,000,000, “Luminescent Platinum(II) Complexes. Synthesis, Excited State Properties and Application Studies”

**2004**, The Croucher Foundation, HK\$ 40,000, Invitation of Professor M. E. Thompson from University of Southern California to deliver a series of postgraduate lectures and an Open Lecture on Organic Optoelectronics in June 2004 at HKU

**1998**, The Croucher Foundation, HK\$ 520,000, The Croucher Advanced Study Institute “Advanced Techniques in Molecular Materials”

**1995–2000**, The Croucher Foundation, HK\$ 560,000, “Setting up of High-Power Picosecond Laser and a High-Power Nanosecond YAG Laser”

**1989–1994**, The Croucher Foundation, HK\$ 1,120,000, “Photochemical Catalysts and Energy Storage Reactions”

**b) University Grant Council**

**2010**, UGC, HK\$ 92,000,000, “Area of Excellence: Institute of Molecular Functional Materials” (Project Coordinator: Prof V. W.-W. Yam; PI: Prof. C.-M. Che)

**2007**, UGC, HK\$ 16,800,000, “Area of Excellence: Institute of Molecular Technology for Drug Discovery and Synthesis” [Sustained Funding]

**2001**, UGC, HK\$ 48,000,000, “Area of Excellence: Institute of Molecular Technology for Drug Discovery and Synthesis”

**c) Innovation and Technology Fund**

**2012**, Innovation and Technology Fund, ITSP-Tier 3, HK\$ 975,200, “Therapeutic applications of timosaponins and their synthetic derivatives”

**2012**, Innovation and Technology Fund, ITSP-Tier 3, HK\$ 878,990, “Metal-organic materials and prototype device for organic photovoltaic cell application”

**2011**, Innovation and Technology Fund, ITSP-Tier 3, HK\$ 959,100, “Direct Sample Analysis by Mass Spectrometry: Development and Analytical Application of Tip-Spray Ionization MS and Imaging MS”

**2011**, Innovation and Technology Fund, Innovation and Technology Support Programme Guangdong-Hong Kong Technology Cooperation Fund, HK\$ 13,664,990, “Research and Development of Phosphorescent Organic Light Emitting Diode (OLED) Materials and Prototype Devices for Lighting Applications”

**2010**, Innovation and Technology Fund, Innovation and Technology Support Programme (Tier 2), HK\$ 12.7 million, “Discovery and Pre-Clinical Evaluation of Promising Metal-Based Anti-Cancer Drug Leads”

**2009**, Innovation and Technology Fund, Innovation and Technology Support Programme (Tier 3), HK\$ 992,000, “New Materials for Organic/Polymer Based Photovoltaic Cells”

**2008**, Innovation and Technology Fund, Innovation and Technology Support Programme (Tier 3),

HK\$ 996,516, “Green Chemistry. Application of Nanotechnology in Development of Highly Efficient and Environmental Friendly Chemical Synthesis”

**2008**, Innovation and Technology Fund, Innovation and Technology Support Programme-Platform Research Projects, (HK\$ 11,070,000 + sponsorship HK\$ 1,255,250), “Research & Development of New Materials for Printable Electrons”

**2007**, Innovation and Technology Fund, Innovation and Technology Support Programme (Tier 3), HK\$ 998,000, “Discovery and Preclinical Evaluation of the Gold(III) Complexes [Au(CNC)]<sup>3+</sup> as Novel Chemocytotoxic Agents for Hepatocellular Carcinoma and Nasopharyngeal Carcinoma”

**2006**, Innovation and Technology Fund, Innovation and Technology Support Programme (ITSP)-Guangdong-Hong Kong Technology Cooperation Funding Scheme, HK\$ 5.5 M + sponsorships HK\$ 0.6 M, “New OLED Materials Technologies for Displays, Illumination and Backlighting”

**2001**, Innovation and Technology Fund, HK\$ 6,000,000, “Research and Development of New Materials for Organic Light Emitting Devices”

#### **d) Research Grant Council**

**2013**, RGC, HK\$ 656,521, “Transition Metal-Catalyzed Oxidative C–H Functionalization. Reactive Metal-Oxygen and Metal-Nitrogen Multiple Bonded Complexes and Photochemical Catalysis”

**2012**, RGC, HK\$ 1,150,000, “Molecular Design of New Classes of Phosphorescent d<sup>8</sup> Metal Complexes with Long-Lived Emissive Excited States and Application Studies in Photo-Catalysis, Luminescent Sensors, and Molecular Self-Assembly”

**2010**, RGC, HK\$ 1,095,000, “Transition Metal-Catalysed Oxygenation Reactions. Biomimetic and Photochemical Approaches”

**2009**, RGC, HK\$ 1,217,076, “Phosphorescent Metal Complexes with d<sup>8</sup> and d<sup>10</sup> Electronic Configurations. Photochemistry, and Self-Assembled Nanostructure”

**2009**, RGC-Collaborative Research Fund, HK\$ 4,900,000, “Reactive Metal-Ligand Multiple Bonded Complexes. From Biomimetic Reactions to Highly Efficient Chemical Synthesis”

**2008**, RGC, HK\$ 883,200, “Metal-Catalyzed Atom and Group Transfer Reactions for Selective Functionalization of Carbon-Hydrogen Bonds”

**2007**, RGC, HK\$ 923,000, “Molecular Design and Application Studies of Photoluminescent *Platinum(II) Complexes*”

**2006**, RGC, HK\$ 707,690, “Reactive metal-oxo complexes of group VIII metals for organic oxidations”

**2005**, RGC, HK\$ 321,000, “Metal-carbon multiple bonded complexes in catalysis and supramolecular chemistry”

**2004**, RGC, HK\$ 579,800, “Metal-nitrogen multiple bonded complexes. Synthesis and applications in carbon-nitrogen bond formation reactions”

**2003**, RGC, HK\$ 776,000, “Novel Photoluminescent, sensory and Photocatalytic Materials Derived from Closed-Shell Metal Ions and Pi-Conjugated Organics: Impact of Weak Intermolecular Interactions and Metal-Functionalization Upon Photophysical and Photochemical Properties”

**2002**, RGC, HK\$ 645,000, “Oxidation Chemistry of Ruthenium and Osmium-Oxo Complexes, Biomimetic Oxidations and Photocatalysis”

**2001**, RGC, HK\$ 761,589, “Metal-Carbon Multiple Bonds. From Materials Science and Carbon-Carbon Bond Forming Reactions”

**2000**, RGC, HK\$ 711,817, “Metal Mediated Nitrogen Atom Transfer Reactions: Organoimido, Hydrazido and Dinitrogen Complexes of Ruthenium and Osmium”

**\*1999**, RGC, HK\$ 1,557,000, “Luminescent Coordinative Unsaturated d<sup>8</sup> and d<sup>10</sup> Metal Complexes. Photoluminescence Properties and Applications”

**1998**, RGC, HK\$ 445,000, “Metal-Catalysed Asymmetric Organic Oxidations: Chiral Ruthenium-Oxo and Peroxo Complexes”

**\*1997**, RGC, HK\$ 1,006,000, “High-Valent Nitrido and Imido Complexes of Ruthenium and Osmium for Nitrogen Atom Transfer Reactions”

**1996**, RGC, HK\$ 780,000, “High-Valent Alkylidene and Alkylidyne Complexes of Ruthenium and Osmium. Electron Transfer Properties and Catalysts for Carbon-Carbon Bond Formation”

**1995**, RGC, HK\$ 564,000, “Inorganic and Organometallic Photochemistry. Luminescent Homo- and Hetero-nuclear metal Complexes”

**1994, RGC, HK\$ 626,000, “Metal-Nitrogen Multiple Bonding. From High-Valent Metal-Nitrido and Metal Imido Complexes to Catalysts for Alkene Aziridination”**

**\*1993, RGC, HK\$ 850,000, “Chiral Ruthenium-Oxo Complexes”**

**1993, RGC, HK\$ 560,000, “Structural, physical properties, and theoretical studies of Buckminsterfullerene C<sub>60</sub> and its metal derivatives”, Professor P. C. W. Fung of the Physics Department was a co-principal investigator of this project**

**\*1992, RGC, HK\$ 672,000, “Design of Luminescent Inorganic Materials for Studies of Metal-Metal Bonding, Photoredox Reactions and Supramolecular Photochemistry and DNA Recognition”**

**1991, RGC, HK\$ 270,000, “Metal ion promoted organic reactions. Metal complexes of chiral amine, amide, alkoxide and phosphine ligands for asymmetric organic synthesis”, Professor K. F. Cheng of the Chemistry Department was the principal investigator**

**\*1990, UGC, HK\$ 410,000, “Model Reactions for Nitrogen Fixation. Synthesis and Redox Chemistry of High-Valent Nitrido Complexes of Ruthenium and Osmium”**

**1988, UGC, HK\$ 550,000, “Homogeneous Oxidative Catalysts”**

Note: [\*] strongly recommended and/or outstanding by the external assessors

#### **e) Others**

**2013, Germany/Hong Kong Joint Research Scheme, “Medicinal Chemistry of Gold Complexes”**

**2012, 国家重点基础研究计划（973计划）National Basic Research Program (“973” Program), RMB 3,400,000, “三重激发态-基础理论与应用” “Triplet Excited States – Basic Fundamental and Applications”**

**2012, 国家自然科学基金(面上项目) General Program of National Natural Science Foundation of China, RMB 800,000, “过渡金属卟啉络合物催化的卡宾及氮宾碳氢键插入反应及其应用研究” “Metalloporphyrin catalyzed carbene and nitrene C–H bond insertion reactions and their applications”**

**2012, Hong Kong Jockey Club Charities Trust - Establishment of Research and Development Laboratories for Chinese Medicine**

**2011, Department of Health (HKSAR), HK\$ 9,000,000, “Hong Kong Chinese Materia Medica Standards”**

**2009, Department of Health (HKSAR), HK\$ 3,400,000, “Hong Kong Chinese Materia Medica Standards”**

**2008, Natural Science Foundation of China (NSFC)/Hong Kong RGC Joint Research Scheme, HK\$ 690,200, “Self-assembled metal coordination polymers and supramolecular systems containing  $\pi$ -conjugated organic ligands”**

**2005, Germany/Hong Kong Joint Research Scheme, “Photoluminescent Properties and Applications of Luminescent d<sup>8</sup> and d<sup>10</sup> Metal Complexes with Metal-Metal Interactions”**

**2005, National Natural Science Foundation of China (NSFC)/Hong Kong RGC Joint Research Scheme, HK\$ 794,218, “Functionalized Phosphorescent Metal-Organic Materials for Biomedical, Photocatalytic and Organic Optoelectronic Applications”**

#### **L) Outside Donation for Research**

During the period of 2003–2004, I have obtained the following outside donations:

- (1) A private donation of HK\$ 2 million for the development of anticancer inorganic medicines
- (2) A corporate donation of HK\$ 0.5 million by Coled Display Ltd for the purchase of small pieces of equipment for the clean room
- (3) A corporate donation of HK\$ 160,000 by e-Ray Optoelectronic Co. Ltd for the development of materials

#### **M) Patents**

##### List of Patents (OLED)

1. “Organometallic Light-emitting Material” US 7,026,480 B2; Japanese Patent Application No. 2002-111334; Chinese Patent No. ZL02118533.6; Taiwanese Patent Application No. 091104372; Hong Kong Stand Patent Application No. 03101825.6

2. "Electroluminescent Material" US 6,653,654 B1; European Patent Application No. 03714623; Chinese Patent Application No. 03809922.5; Japanese Patent Application No. 2004-501422; Taiwanese Patent Application No. 092106163
3. "Electroluminescent Metallo-Supramolecules with Terpyridine-based Group" U.S. Non-Provisional Application No. 10/290,120; European Application No. 03757649.3; Japanese Patent Application No. 2004-549023; China Patent Application No. 200380108386.8; Taiwanese Patent Application NO. 092130324
4. "Material for Electroluminescent Devices" US 7,157,155; PCT PCT/CN2004/001524; Chinese Patent Application No. 200480040162.2; Taiwan Patent NO. I335191
5. "System and Method for Producing Light with Organic Light-Emitting Device" U.S. Non-Provisional Patent Application No. 10/852,231
6. "Organic Light-Emitting Devices" U.S. Non-Provisional Patent Application No. 10/835,481
7. "Tetrameric Zinc(II) Complexes Bridged By  $\mu$ -Oxo" U.S. Non-Provisional Patent Application No. 60/861,742
8. "Organic Light Emitting Devices" U.S. Non-Provisional Patent Application No. 11/713,755
9. "Extended PI-Conjugated Platinum(II) Complexes" U.S. Non-Provisional Patent Application No. 60/944,423

#### List of Patents (Inorganic Drug)

1. "Methods for Using Gold(III) Complexes as Anti-Tumour and Anti-HIV Agents" US2004/006381 A1; PCT/CN03/00780
2. "Gold(III) Complexes as Anti-Tumour and Anti-HIV Agents" European Patent No. EP 1545512B1
3. "Diazene-bridged crown ether lithium compounds and methods for their use" US Patent No. 7,468,434; UK Patent No. GB2437456.
4. "Di(amino-substituted)heteroarene compounds as osteoblastogenesis agents" US Patent No. 7,541,379.
5. "Pharmaceutical composition having a ruthenium oxalate compound and method of using the same" US Patent No. 7,648,977; PRC Patent No. ZL200680039799.9; European Patent No. 1940385.
6. "Anti-cancer phosphine containing  $[\text{Au}^{\text{III}}(\text{CNC})_m\text{L}]^{n+}$  complexes and derivatives thereof and methods for treating cancer using such compositions" US Patent No. 7,632,827.
7. "Hydroxy-substituted gold(III) porphyrin complexes as histone deacetylase inhibitors" US Patent No. 8,563,712.
8. "Pharmaceutical composition containing cyclometalated N-heterocyclic carbene complexes for cancer treatment" US Patent No. 8,530,659.

#### List of Patents (Sensory Materials)

1. Luminescent Sensory Material for Organic-Halogen Compounds and Methods and Apparatus Utilizing Such, US Patent no. 6,998,271

#### List of Patents (Catalysis)

1. "Method for Conversion of Terminal Alkenes to Aldehydes Using Ruthenium (IV) Porphyrin Catalysts", US Regular Patent No. 7,582,750
2. "Intramolecular amidation of sulfamates catalyzed by metalloporphyrins", US Patent No. 7,105,660.
3. "Diastereoselective Epoxidation of Allylically Substituted Alkenes Using Metalloporphyrin Catalysts", US Patent No. 7,482,478
4. "Supported Ruthenium Nanoparticles as Catalysts for Cis-Dihydroxylation and Oxidative Cleavage of Alkenes", US Patent No. 7,393,985; PCT Patent Application No. PCT/CN2005/000540

## **N) Journal Cover Pictures**

### Front Cover

1. *Chemistry – A European Journal*, 2001, **7**, Issue 11
2. *Chemistry – A European Journal*, 2003, **9**, Issue 24
3. *Chemistry – A European Journal*, 2005, **11**, Issue 6
4. *Inorganic Chemistry*, 2005, **44**, Issue 11
5. *Chemical Communications*, 2006, Issue 38
6. *Angewandte Chemie International Edition*, 2006, **45**, Issue 34
7. *Chemistry – A European Journal*, 2006, **12**, Issue 11
8. *Chemistry – An Asian Journal*, 2007, **2**, Issue 9
9. *Chemistry – An Asian Journal*, 2008, **3**, Issue 1
10. *Chemistry – A European Journal*, 2008, **14**, Issue 10
11. *Journal of the American Chemical Society*, 2009, **131**, Issue 6
12. *Chemistry – A European Journal*, 2009, **15**, Issue 15
13. *Dalton Transactions*, 2009, Issue 48
14. *Chemistry – A European Journal*, 2010, **16**, Issue 10
15. *Chemical Communications*, 2010, **46**, Issue 2
16. *Chemical Science*, 2011, **2**, Issue 2
17. *Chemical Society Reviews*, 2011, Issue 4
18. *Organic & Biomolecular Chemistry*, 2012, **10**, Issue 5
19. *Organic & Biomolecular Chemistry*, 2012, **10**, Issue 35
20. *Chemical Communications*, 2013, **49**, Issue 70.

#### Inside Cover

1. *Chemical Communications*, 2005, Issue 28
2. *Chemistry - A European Journal*, 2005, **11**, Issue 13
3. *Angewandte Chemie International Edition*, 2006, **45**, Issue 17
4. *Chemistry - A European Journal*, 2007, **13**, Issue 2
5. *Angewandte Chemie International Edition*, 2008, **47**, Issue 50
6. *Chemistry - A European Journal*, 2009, **15**, Issue 41
7. *Chemical Communications*, 2010, Issue 41
8. *Chemical Science*, 2011, **2**, Issue 2
9. *Chemical Communications*, 2011, **47**, Issue 33
10. *Chemistry - An Asian Journal*, 2014, **9**, Issue 1

#### Back Cover

1. *Chemical Communications*, 2011, **47**, Issue 40
2. *Angewandte Chemie International Edition*, 2012, **51**, Issue 11
3. *Chemical Science*, 2012, **3**, Issue 6
4. *Advanced Materials*, 2013, **25**, Issue 46

#### **O) Selected Works Highlighted by Others or Featured by Journal Editors**

1. The early works on photoluminescent Au(I) compounds are cited in the Highlight article by L. H. Gade published in *Angew. Chem. Int. Ed.*, 1997, **36**, 1171–1173.
2. “Isolation and X-Ray Crystal Structure of an Unusual biscarbene Metal Complex and Its Reactivity Toward Cyclopropanation and Allylic C-H Insertion of Unfunctionalized Alkenes” (Y. Li, J.-S. Huang, Z.-Y. Zhou, C.-M. Che, *J. Am. Chem. Soc.*, 2001, **123**, 4843–4844) is highlighted by *CHEMTRACTS-Inorganic Chemistry*, 2002, **15**, 37–41.
3. The work on using “PhI(OAc)<sub>2</sub> + NH<sub>2</sub>R” for metal-catalyzed nitrogen atom transfer reactions is considered as a breakthrough by P. Dauban and R. H. Dodd in their review article entitled “Iminoiodanes and C–N Bond Formation in Organic Synthesis” in *Synlett*, 2003, 1571.
4. The works on reactive metal-imido complexes for C–H aminations are highlighted in the Highlight article “Recent Advances in Catalytic Intramolecular C–H Aminations” by H. M. L. Davies and M. S. Long published in *Angew. Chem. Int. Ed.*, 2005, **44**, 3518–3520.
5. “A Practical and Mild Method for Highly Selective Conversion of Terminal Alkenes to Aldehydes via a Subsequent Epoxidation/Isomerization Route Using Ruthenium(IV) Porphyrin

- Catalysts” (J. Chen, C.-M. Che, *Angew. Chem. Int. Ed.*, 2004, **43**, 4950–4954) is highlighted under “News and Views in Organic Chemistry” in *Letters in Organic Chemistry*, 2005, **2**, 290–292.
6. “Metal complexes of chiral binaphthyl Schiff-base ligands and their application in stereoselective organic transformations” (C.-M. Che, J.-S. Huang, *Coord. Chem. Rev.*, 2003, **242**, 97–113) was recognized in the “Top-50 most cited articles” as published in *Coordination Chemistry Reviews* (2003–2006).
  7. “Gold(III) Porphyrin-Catalyzed Cycloisomerization of Allenones” (C.-Y. Zhou, P. W. H. Chan, C.-M. Che, *Org. Lett.*, 2006, **8**, 325–328) is featured on the ACS Publications website as a 2006 Most-Cited Article based on citation data obtained from Thomson ISI.
  8. “Gold(III) Porphyrin-Catalyzed Cycloisomerization of Allenones” (C.-Y. Zhou, P. W. H. Chan, C.-M. Che, *Org. Lett.*, 2006, **8**, 325–328) was featured on *Nature China* on March 21, 2007 (doi:10.1038/nchina.2007.24) (in “Latest weekly Research Highlights–Chemistry”).
  9. “Phosphine Gold(I)-Catalyzed Hydroamination of Alkenes under Thermal and Microwave-Assisted Conditions” (X.-Y. Liu, C.-H. Li, C.-M. Che, *Org. Lett.*, 2006, **8**, 2707–2710) is featured on the ACS Publications website as one of “Organic Letters’ Hot Papers” based on citation data obtained from Thomson ISI.
  10. “Highly Efficient Au(I)-Catalyzed Intramolecular Addition of  $\beta$ -Ketoamide to Unactivated Alkenes” (C.-Y. Zhou, C.-M. Che, *J. Am. Chem. Soc.*, 2007, **129**, 5828–5829) is highlighted on the websites “<http://www.organic-chemistry.org/Highlights/2008/28April.shtm>” and in SYNFACTS 2007, 686.
  11. “Synthesis of Substituted 1,2-Dihydroquinolines and Quinolines from Aromatic Amines and Alkynes by Gold(I)-Catalyzed Tandem Hydroamination-Hydroarylation under Microwave-Assisted Conditions” (X.-Y. Liu, P. Ding, J.-S. Huang, C.-M. Che, *Org. Lett.*, 2007, **9**, 2645–2648) is highlighted on the website <http://www.organic-chemistry.org/Highlights/2007/15August.shtm>
  12. “A submicrometer wire-to-wheel metamorphism of hybrid tridentate cyclometalated platinum(II) complexes” (W. Lu, S. S.-Y. Chui, K.-M. Ng, C.-M. Che, *Angew. Chem. Int. Ed.*, 2008, **47**, 4568–4572) is highlighted in *Nature China* 18 June 2008 and on the website <http://www.nature.com/nchina/2008/080618/full/nchina.2008.137.html>
  13. “Metal-Insulator-Metal Transistor” (P. Stallinga, V. A. L. Roy, Z. Xu, H. Xiang, C.-M. Che, *Adv. Mater.*, 2008, **20**, 2120–2124) is highlighted in NPG Asia Materials 2008 as Electronic: Golden Transistors.
  14. “Polymer-Supported Ruthenium Catalyst for Carbenoid Transfer Reactions” (M. K.-W. Choi, W.-Y. Yu, M.-H. So, C.-Y. Zhou, Q.-H. Deng, C.-M. Che, *Chem. Asian J.*, 2008, **3**, 1256–1265) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 01/09.
  15. “Gold(III) Salen Complex-Catalyzed Synthesis of Propargylamines via a Three-Component Coupling Reaction” (V. K.-Y. Lo, Y. Liu, M.-K. Wong, C.-M. Che, *Org. Lett.*, 2006, **8**, 1529–1532) is highlighted by Organic Chemistry Portal (Prof. Douglass F. Taber) for stereoselective C-N ring construction in 17 Nov 2008 (<http://www.organic-chemistry.org/Highlights/2008/17November.shtm>).
  16. “Highly Selective Metal Catalysts for Intermolecular Carbenoid Insertion into Primary C-H Bonds and Enantioselective C-C Bond Formation” (H.-Y. Thu, G. S.-M. Tong, J.-S. Huang, S. L.-F. Chan, Q.-H. Deng, C.-M. Che, *Angew. Chem. Int. Ed.*, 2008, **47**, 9747–9751) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 02/09.
  17. “Highly Efficient and Regioselective Platinum(II)-Catalyzed Tandem Synthesis of Multiply Substituted Indolines and Tetrahydroquinolines” (X.-Y. Liu, C.-M. Che, *Angew. Chem. Int. Ed.*, 2009, **48**, 2367–2371) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 06/09.
  18. “Synthesis of Substituted 1,2-Dihydroquinolines and Quinolines from Aromatic Amines and Alkynes by Gold(I)-Catalyzed Tandem Hydroamination-Hydroarylation under Microwave-Assisted Conditions” (X.-Y. Liu, P. Ding, J.-S. Huang, C.-M. Che, *Org. Lett.*, 2007, **9**, 2645–2648) is selected on the ACS Publications website in 2009 as Top 20 most-cited articles published in the last three years.

19. "Silver(I)-Mediated Highly Enantioselective Synthesis of Axially Chiral Allenes" (V. K.-Y. Lo, C.-Y. Zhou, M.-K. Wong, C.-M. Che, *Chem. Commun.*, 2010, **46**, 213–215) has been selected by Royal Society of Chemistry as RSC Prospect (8 Oct 2009).
20. "Platinum(II) Complexes with Dipyridopenazine Ligands as Human Telomerase Inhibitors and Luminescent Probes for G-Quadruplex DNA" (D.-L. Ma, C.-M. Che, S.-C. Yan, *J. Am. Chem. Soc.*, 2009, **131**, 1835–1846) has been advertised by ACS Publications in C&EN Aug 3, 2009.
21. "Synthesis of Chiral Secondary Amines by Gold(I)-Chiral Bronsted Acid Catalysis" (X.-Y. Liu, C.-M. Che, *Org. Lett.*, 2009, **11**, 4204–4207) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 12/09.
22. "Highly Efficient Oxidative Carbon-Carbon Coupling with SBA-15-Supported Iron Terpyridine Catalyst" (P. Liu, Z.-Y. Zhou, S. Xiang, C.-M. Che, *Chem. Commun.*, 2010, **46**, 2739–2741) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 7/10.
23. "Luminescent platinum(II) complexes. Electronic spectroscopy of platinum(II) complexes of 2,2':6',2''-terpyridine (terpy) and p-substituted phenylterpyridines and crystal structure of [Pt(terpy)Cl][CF<sub>3</sub>SO<sub>3</sub>]" (H.-K. Yip, L.-K.-Cheng, K.-K. Cheung, C.-M. Che, *Chem. Commun.*, 1993, 2933–2938) was recognized "The 30<sup>th</sup> most cited article" in Dalton Transactions.
24. A research article on *Imaging Mass Spectrometry Analysis of Banknote has been published in Analytical Chemistry* ["Molecular Imaging of Banknote and Questioned Document Using Solvent-Free Gold Nanoparticle-Assisted Laser Desorption/ Ionization Imaging Mass Spectrometry", H.-W. Tang, M. Y.-M. Wong, S. L.-F. Chan, C.-M. Che, K.-M. Ng, *Anal. Chem.*, **2011**, *83*, 453–458]. This research work has been highlighted in *Chemical and Engineering News* as Latest News (<http://pubs.acs.org/cen/news/88/i50/8850news4.html>).
25. "Manganese-Catalyzed Enantioselective *cis*-Dihydroxylation" (T. W.-S. Chow, Y. Liu, C.-M. Che, *Chem. Commun.*, 2011, **47**, 11204–11206) is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 12/11.
26. "Gold-mediated bifunctional modification of oligosaccharides via a three-component coupling reaction" (K. K.-Y. Kung, G.-L. Li, L. Zou, H.-C. Chong, Y.-C. Leung, K.-H. Wong, V. K.-Y. Lo, C.-M. Che, M.-K. Wong) is one of the top ten accessed articles from the online version of *Organic & Biomolecular Chemistry* in November 2011.
27. The works on amide bond formation via oxidation coupling of alkynes with amines catalyzed by manganese porphyrin complex are highlighted in the article "Rethinking amide bond synthesis" by V. R. Pattabiraman and J. W. Bode published in *Nature*, 2011, **480**, 471–479.
28. The work on iron(III)-catalyzed nitrene insertion reaction of aldehydes has been cited in a highlighted column on "Reduction and Oxidation" *Organic Chemistry Highlights*, May 21, 2012.
29. The work on Ir(III)-Catalyzed carbene insertion to C–H and Si–H Bonds has been selected by the editorial board of SYNFACTS for the important insights (*SYNFACTS* 06/12).
30. The work on N-terminal functionalization has been cited in a highlighted column on "Functional Group Procetion" *Organic Chemistry Highlights*, October 29, 2012.
31. Interviewed by *Chemical Communications: Chem. Commun.*, 2012, **48**, 3378.
32. "Dirhodium Carboxylates Catalyzed Enantioselective Coupling Reactions of  $\alpha$ -Diazophosphonates, Anilines, and Electronic-Deficient Aldehydes" is selected by the Editorial Board of SYNFACTS and published in SYNFACTS issue 02/13.
33. The work on manganese-catalyzed enantioselective *cis*-dihydroxylation of electron-deficient alkenes has been cited in a highlighted column on "Arrays of Stereogenic Centers: The Carbery Synthesis of Mycestericin G" *Organic Chemistry Highlights*, February 25, 2013.
34. The work on urea postmodified metal-organic framework as hydrogen-bond-donating heterogeneous catalyst is selected as one of the HOT *ChemComm* articles for May 2013.
35. The work on selective oxidation of terminal alkenes to aldehydes catalyzed by iron(III) porphyrin with triflate as a counter anion has been cited in a highlighted column on "Reactions of Alkenes" *Organic Chemistry Highlights*, September 10, 2013.

## P) Publications

### Summary:

- **Over 28900 citations excluding self-citations (up to May 13, 2014)**
- *Journal of the American Chemical Society* (56)
- *Angewandte Chemie International Edition* (38)
- *Chemical Communications + Journal of the Chemical Society Chemical Communications* (133)
- *Chemistry - A European Journal* (55)
- *Dalton Transactions + Journal of the Chemical Society Dalton Transactions* (114)
- *Inorganic Chemistry* (77)
- *Organometallics* (20)
- *Chemistry - An Asian Journal* (27)
- *Organic Letters* (27)
- *Chemical Science* (17)
- *Journal of Organic Chemistry* (14)
- *Advanced Materials* (10)
- *Applied Physics Letters* (14)
- *Coordination Chemistry Reviews* (9)
- *Accounts of Chemical Research* (1)
- *Proteomics* (6)
- *Cancer Research* (4)
- *International Journal of Cancer* (2)
- *British Journal of Cancer* (1)
- *Chemical Society Reviews* (1)
- *Cancer* (1)

*Year 1979*

1. Metal Template Synthesis of Aqua{2,12-Dimethyl-3,7,11,17-tetra-aza-bicyclo [11.3.1]-heptadeca-1(17),2,11,13,15-pentaene}ruthenium(II) Perchlorate.  
C.K. Poon and C.M. Che  
*Journal of the Chemical Society, Chemical Communications*, 1979, 861–62.

*Year 1980*

2. Structural and Mechanistic Studies of Co-ordination Compounds. Part 24. Application of Cyclic Voltammetry to Study the Chelation Effect on Acid Hydrolysis of Some cis- and trans-Ruthenium(II) Amine Complexes.  
C.K. Poon, C.M. Che and Y.P. Kan  
*Journal of the Chemical Society, Dalton Transactions*, 1980, 128–33.
3. Structural and Mechanistic Studies of Co-ordination Compounds. Part 25. Synthesis and Characterization of Some Octahedral Halogeno amine and -thioether Complexes of Ruthenium-(II) and -(III).  
C.K. Poon and C.M. Che  
*Journal of the Chemical Society, Dalton Transactions*, 1980, 756–62.

*Year 1981*

4. Structural and Mechanistic Studies of Co-ordination Compounds. Part 26. Synthesis and Characterization of Some Octahedral Complexes of Ruthenium-(II) and -(III) with Macrocyclic Quadridentate Thioethers.  
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