

In Celebration of the 65th Birthday of Professor Andy Hor

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It is indeed a great honor and a pleasure for us to guest edit this special collection in *Chemistry – An Asian Journal* themed “Metals in Functional Materials and Catalysis” to celebrate the 65th birthday of Professor Andy Hor. The 56 excellent contributions to this special edition constitute a well-deserved “chemical” present from his many colleagues and friends.

Born in Hong Kong, Andy studied at Imperial College London, obtained a D.Phil. from Oxford with Michael Mingos and was a Postdoc at Yale with Richard Adams, which provided him with an excellent training by pioneers in metal clusters and aggregates. He rapidly gained a high reputation in the international community and established himself as a major player because of his broad and significant contributions as a respected scientist, an aspiring educator, and a visionary management leader over three decades.

Andy and his coworkers have published over 400 papers with 12,500 citations in heterometallic assemblies, organometallic catalysis, carbon materials, coordination oligomers and metal-air batteries. His numerous achievements include fundamental discoveries in multi-faceted metalloligand versatility, heterocyclic carbene catalysis, metallo-supramolecular assemblies, crystallographic elucidation of unusual metal entities as well as applications in mixed-oxide nanocarbon hybrids for electrocatalytic oxygen reduction, bifunctional oxygen cathode cata-

lysts for rechargeable zinc-air batteries, etc. He demonstrated the synergistic relationship of metal unsaturation and ligand hemilability not only in structural terms but also in promoting catalytic efficacy. His earlier work on the chemical modification of carbon nanotubes that provides a simple methodology to decorate carbon nanotubes with platinum nanoparticles was among the earliest protocols and has been frequently cited in fuel cell catalytic studies. The recent investigations with the team at A*STAR also demonstrated the considerable potential of the oxygen reduction reaction in energy storage and conversion devices. Not surprisingly, Andy was a much sought-after speaker and he has delivered many plenary, keynote and invited lectures at major international conferences such as ICC, ICOMC, ACC and ISCIC and on the occasion of academic tours. He was elected Fellow of European Academy of Sciences, Fellow of Singapore National Academy of Sciences (FSNAS), Fellow of Singapore National Institute of Chemistry, and Fellow of Royal Society of Chemistry (FRSC). He was also a Humboldt Fellow, Commonwealth Fellow, ASAIHL (Associate of Southeast Asian Institutions of Higher Learning) Fellow, and Visiting Fellow of the Japan Society for the Promotion of Science (JSPS). He was among the early contingents of NUS academics to get the national honour of Young Scientist Award and ASEAN (Achievement) Award.

Andy is a renowned educator. Approximately 500 students and young scientists have been trained in his laboratory in a range of school enrichment projects, undergraduate research and postgraduate MSc and PhD as well as postdoctoral works. He was the first faculty member from the Chemistry Department of the National University of Singapore (NUS) to be conferred the prestigious University Educator Award and among the first faculty members to join the NUS Teaching Academy. He received numerous teaching awards from the Department and Faculty in his three decades at NUS. His triple strengths in research, education and management represent an impressive hallmark of Andy and are widely acknowledged by his peers, as evident from his decade-long chairmanship of the National Young Scientist Award Committee and L'Oréal Women in Science National Fellowship Programme. He was also conferred a number of prestigious education awards, including the Japan Chamber of Commerce & Industry (JCCI) Award in Education and GIST-SNIC Award in Chemistry Education.

Andy is a visionary leader. He shaped the chemistry research at NUS during his three terms as Head of Department and Vice Dean of the Science Faculty, and built the Department to one of the finest in the world. (#7 in QS Chemistry ranking 2021). He did so with the intention to sourcing and securing local and

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international talents in emerging areas like organocatalysis, chemical biology, metal-organic framework, biophysical chemistry, surface science, bioanalysis and functional polymers. Many of the hires became award winners and research leaders. For example, a hired Assistant Professor in organocatalysis is now a Full Professor and the Head of Department of Chemistry at NUS.

During his 5-year secondment to helm the Institute of Materials Research and Engineering (IMRE) under Agency for Science, Technology and Research (A*STAR) as the Executive Director (ED), he launched a number of thematic labs to foster collaborations across the eco-system and use that as a spring-board to build capabilities and develop people. These resulted in an Institute that rose in stature in use-inspired basic research and broke annual records in terms of research publications, citation counts, industry projects and revenues, technology transfers, startups and a series of talent awards. The works today in composite materials, molecular materials, polymers, photonics, plasmonics, bioanalytical sensors, and batteries can be traced to the significant investment under his leadership. For example, a young polymer scientist from his time is now the ED of IMRE.

His 4+ years with The University of Hong Kong (HKU) as Pro-Vice Chancellor and Vice President (Research) were also noteworthy. Under his leadership, the University rebounded from the earlier setbacks and emerged as the top performer in Hong Kong in the Research Assessment Exercise 2020 in which HKU has the highest proportion of research rated as 4-stars ("world leading"). He also helped to lay the foundation for the establishment of multi-billion strategic laboratories of HKU under the InnoHK clusters in the Science Park as well as the coming "Tech Landmark" on campus. These mega projects will shape the future of science, engineering and medicine of HKU and Hong Kong. In parallel, he also created the "i-Dendron" as the first-of-its-kind innovation hub in promoting entrepreneurship in the century-old HKU.

In 2020, Andy returned to Singapore to take up the current position as Deputy Chief Executive (Research) of A*STAR. He took on a number of responsibilities to promote investigator-led research, develop young talents, overview a number of horizontal technology platforms (*viz.* robotics, AI analytics, urban green tech, social science tech, medtech, agritech and infectious diseases), and strategic programs (*viz.* synthetic biology, quantum and brain-body research). He thrives on the challenge to sustain an effective public science and technology organization that builds on first-class basic research and people

potential to promote and deliver technological, environmental, social, economic and national outcomes.

Andy is certainly among the most active Singaporean chemistry leaders in the international arena and he has played a major role in attracting numerous scientists to Singapore and enhancing the international visibility of its scientific institutions. This is evident from the numerous conferences that he chaired and/or organised, for example, the 41st International Conferences on Coordination Chemistry (ICCC-41), 15th Asian Chemical Congress (15ACC), 11th International Symposium for Chinese Inorganic Chemists (ISCIC-11) in Singapore as well as his membership in advisory boards of international journals. His leadership was further illustrated as President of the Federation of Asian Chemical Societies (FACS), Chair of the Research Leaders Group of Universitas 21, National Chair of the ASEAN Committee on Science, Technology & Innovation (COSTI) and President of Singapore National Institute of Chemistry (SNIC). He brought SNIC to the world stage through various partnership programs with leading bodies like ACS (USA), RSC (UK) and FACS (Asia), and was conferred the inaugural SNIC Distinguished Chemistry Service Award in 2018. It is not surprising that he was among the founding and longest serving members of the Asian Chemical Editorial Society (ACES).

Many of us have benefited and thoroughly enjoyed the warm friendship and hospitality of Andy and his charming family, his wife Beng and their three daughters. His scientific and human qualities make Andy a very special person and we are all delighted to congratulate him most warmly on the occasion of his 65th birthday and wish him the very best for his professional and personal life.



Happy 65th birthday, Andy!

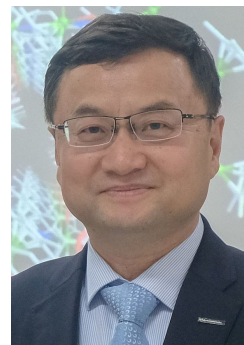
Pierre Braunstein is Emeritus CNRS Research Director at the University of Strasbourg, where he remained for his whole career, except for one year at UC London and another at the TU Munich. He is also affiliated with various universities in China. His fundamental research on inorganic/organometallic chemistry, documented in over 610 publications and reviews, has led to diverse applications in catalysis and nanosciences. He is member of the French Académie of Sciences and the German National Academy of Sciences Leopoldina, and Foreign Corresponding Member of the Academy of Sciences of Lisbon (Portugal) and Zaragoza (Spain). He is Head of the Chemistry Division of the European Academy of Sciences.



Prof. Chi-Ming Che obtained his Ph.D. from The University of Hong Kong in 1982. He joined the Department of Chemistry of The University of Hong Kong in 1983 and is presently the Zhou Guangzhao Professor in Natural Sciences. Prof. Che is an Academician of the Chinese Academy of Sciences (1995), International Member (Foreign Associate) of the US National Academy of Sciences (2013) and Fellow of the World Academy of Sciences (2007). His honors include the First Class Prize of the State Natural Science Award of China (2006), Centenary Prize of Royal Society of Chemistry (2013), Davison Lectureship at Massachusetts Institute of Technology (2013), Huang Yao-Zeng Organometallic Chemistry Award of the Chinese Chemical Society – Lifetime Achievement Award (2016), Ryoji Noyori ACES Award (2016), Peiyang Lecture at Tianjin University (2018), Nankai Centenary Lecture at Nankai University (2019) and Luigi Sacconi Medal (2020). Prof. Che's research interests include basic and translational coordination chemistry; iron catalysis; metal-catalyzed oxidative alkene and alkane functionalization; reactive metal-ligand multiple bonded complexes; photochemistry and excited state dynamics of transition metal complexes; phosphorescent metal emitters and metal-TADF emitters; chemical biology of anti-cancer metal medicines and tradition Chinese medicines.



Professor Guo-Xin Jin received his PhD from Nanjing University in 1987, after post-doctoral work at University of Bayreuth, Germany, he joined Changchun Institute of Applied Chemistry, Chinese Academy of Sciences in 1996 as a professor. In 2001 he moved to Shanghai and held the Chair Professor (CheungKong Scholarship) of Inorganic Chemistry at Fudan University. His research interests are in Organometallic Chemistry, particularly in carborane chemistry, organometallic macrocyclic architecture and catalysts for olefin polymerization.



Professor Fuwei Li received his Ph.D. Under the supervision of Professor Chungu Xia at Lanzhou Institute of Chemical Physics (LICP), Chinese Academy of Sciences (CAS) in 2005, then he became a research assistant in the research group of Professor Suojian Zhang at the Institute of Process Engineering of CAS. After post-doctoral work with Professor Andy Hor at the National University of Singapore, he joined LICP in 2010 as a professor. His research interests are in catalysis and fine chemical synthesis, particularly in the metal-catalyzed selective construction and transformation of C=O/C–O bonds for the preparation of valuable oxygenates.



Yun Zong received his Ph.D. with magna cum laude from Johannes-Gutenberg University Mainz, Germany, in 2002. After a one-year postdoctoral stint at the National University of Singapore, he joined the Institute of Materials Research and Engineering (IMRE) under Agency for Science, Technology and Research (A*STAR), working at multiple fronts of research and innovation. His most recent research was concentrated on nanostructured materials for electrocatalysis and metal-air batteries. In early 2020, Yun made a career shift to join the newly founded A*STAR Research Office, focusing on technology fore-sighting and broad research strategy development.

