

Editorial



Ning Yan

This special issue marks a historical moment for CHIMIA in its nearly 70-year history. It is the first issue dedicated to faculty members in chemistry and chemical engineering, who received their education, or spent a considerable period of time working, in Switzerland and are currently leading a research team in Singapore. The relationships between the authors and the two countries are also reflected on the cover picture of this special issue, inspired by an old Chinese saying “化蛹成蝶”—meaning “Transformation of Pupa into Butterfly”. All the corresponding authors of this special issue received extensive training and accumulated substantial experience in Switzerland, which paved the way to their very successful, independent academic life in Singapore.

Switzerland has a long, proud history in chemistry and chemical engineering research, whereas Singapore is catching up really fast. Singapore’s government has a strong commitment on R&D investment—currently accounting for 2.28% of the country’s GDP, which is close to 6 billion US dollars every year in this tiny country.^[1] Like Switzerland, the chemical industry contributes significantly to the country’s economy (6.5% GDP in 2011^[1]). For this reason, Singapore is striving for research excellence in chemistry and chemical engineering. Accordingly to the latest QS ranking,^[2] two major universities in Singapore are very well recognized for their chemistry and chemical engineering subjects. *In chemical engineering, National University of Singapore (NUS) is ranked at a remarkable position – 5th in the world, whereas Nanyang Technological University (NTU) is ranked 25th. In chemistry, these two universities are ranked 12th and 44th, respectively.*

Such a high profile is certainly a result of combined contributions from excellent individual faculty members. This special issue in CHIMIA will showcase the latest research advances in eight groups in Singapore, led by people with Swiss connections:

Wee Han Ang got his PhD with Prof. Paul Dyson at EPFL in 2007. He was awarded the Prix EPFL de Doctorats for best thesis and the Prix Alliance de l’Invention for his doctoral work. Wee Han is currently an Assistant Professor in the Department of Chemistry at NUS. In this issue, he contributes an article entitled ‘Platinum(IV) Carboxylate Prodrug Complexes as Versatile Platforms for Targeted Chemotherapy’.

Ryan P. A. Bettens did a two-year postdoc with Prof. Alfred Bauder at ETH between 1992 and 1994. He is currently an Associated Professor in the Department of Chemistry at NUS. He describes the continued effort on water modeling in the article ‘Modelling Water: A Lifetime Enigma’.

Thorsten Wohland received his PhD at EPFL with Prof. Horst Vogel in the late 1990s. He is currently an Associated Professor in the Department of Chemistry at NUS. He contributes a feature article in this issue entitled ‘Characterization of Lipid and Cell Membrane Organization by the Fluorescence Correlation Spectroscopy Diffusion Law’.

Ning Yan spent some time with Prof. Paul Dyson at EPFL as an exchange PhD student in 2007. He later came back to the same group as a Marie-Curie Incoming Fellow and Postdoc Scientist between 2009 and 2012 before he joined the Department of Chemical & Biomolecular Engineering, NUS, as an Assistant Professor. His research interest is in green chemistry and biomass conversion: see more in his article ‘Valorization of Renewable Carbon Resources for Chemicals’.

Curt A. Davey spent five years with Prof. Tim Richmond in ETH between 1998 and 2003, first as a postdoctoral scientist and later as a staff scientist. He is currently an Associated Professor in the Division of Structural Biology & Biochemistry at NTU, where he is heading the ‘Laboratory of Genomic Structural Biology’. He has an interesting feature article in this issue entitled ‘Exposure to Metals Can Be Therapeutic’.

Boon Siang Yeo is the youngest in this cohort. He received his PhD with Prof. Zenobi Renato at ETH in 2009. He recently joined the Department of Chemistry, NUS, as an Assistant Professor. His research interest is in the understanding and developing electrocatalysts for energy conversion reactions. Find out more in his article ‘Electrocatalysts for the Selective Reduction of Carbon Dioxide to Useful Products’.

Zhi Li worked for several years as a Group Leader at Department of Biosystems Science and Engineering at ETH. Currently he is an Associate Professor at the Department of Chemical & Biomolecular Engineering, NUS. He is an expert in biocatalysis for renewable chemicals and fuels. In this special issue, Prof. Li highlights his recent research on regio- and stereoselective hydroxylations with enzyme catalysis.

Anthony D. William spent one year at the University of Geneva between 2002 and 2003. Currently he is a Senior Scientist and Team Leader at the Institute of Chemical & Engineering Science, A*Star in Singapore. He contributed an article entitled ‘Acid Mediated Ring Closing Metathesis: A Powerful Synthetic Tool Enabling the Synthesis of Clinical Stage Kinase Inhibitors’.

Finally I wish Switzerland and Singapore continued success in their chemistry and chemical engineering research, and I wish all chemical researchers in these two countries health and happiness in life.

Dr. Ning Yan (Guest Editor)
Department of Chemical & Biomolecular Engineering
National University of Singapore

[1] <http://www.nrf.gov.sg/research/r-d-ecosystem/r-d-investments>

[2] <http://www.topuniversities.com/university-rankings>

The CHIMIA Editorial Board would like to thank the guest editor Dr. Ning Yan for compiling this issue that highlights the outstanding quality of chemical research in Singapore and the importance of international collaboration for Switzerland.