



In Memoriam: Prof. Jingdong Zhang

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In Memoriam: Prof. Jingdong Zhang

Professor Jingdong Zhang from the Department of Chemistry, Technical University of Denmark (DTU), passed away in the early morning of 09 January 2020, aged just 51. She was sparkling and devoted to her science, a prime mover in the new single-molecule electrochemical electron transfer science, and a most charming and noble personality, well-liked by all students and colleagues.

Prof. Zhang was a member of the Editorial Board of *ChemElectroChem* as well as a valued author and reviewer. Together with her friends and colleagues Christian Engelbrekt, Xinxin Xiao and Jens Ulstrup (Technical University of Denmark) as well as Bingwei Mao (Xiamen University, China), we hope to commemorate Prof Zhang's contributions to the electrochemical sciences by this Special *ChemElectroChem* Collection on the theme of "Electrochemical Materials and Interfaces".

Jingdong was a MSc in applied chemistry from Shanghai University (1992), a PhD in analytical chemistry from Changchun Institute of Applied Chemistry (1996) with Professor Erkang Wang as her mentor, and for two years as a postdoctoral fellow at Exploratory Research for Advanced Technology (ERATO-JST) in Japan headed by Professor Kingo Itaya. She came to DTU in 1998, working first as a postdoctoral fellow, then as an assistant and associate professor, and from 2016 as a full professor of inorganic chemistry. In 2017, she was elected a member of the Danish Academy of Technical Sciences for her achievements in

electrochemistry. She was also awarded the Agnes and Betzy prize, a prestigious Danish award for female researchers' meritorious achievements in the engineering sciences.

As well known to our international electrochemistry community, in the later 20th century, the electrochemical sciences underwent a renaissance by introducing new methods of solid-state and surface physics. These included particularly single-crystal electrodes, surface spectroscopies, diffraction methods and not in the least the scanning tunnelling and atomic force microscopies with resolution right down to the level of the single molecule, directly under electrochemical potential control. Jingdong mastered the whole area of "the new electrochemistry". Over the years, with Jingdong as a strong driving force, together with her group she developed the entirely new concept "Single-molecule electrochemistry of complex molecules and biomolecules" with particular focus on redox metalloproteins and redox metalloenzymes including the introduction of strategically chosen target biomolecules, now broadly adopted by research groups in Europe and the USA.

Over the years Jingdong expanded her electrochemical science to include other innovative areas. About a decade ago, she endeavoured into new research programs under the heading "Molecular scale electrochemistry and non-traditional electrochemical materials science" focused on novel type electrochemical surfaces of graphene, metallic nanoparticles, controlled nanoporous metallic surfaces, and other metallic nanostructures, and combinations of these differently based new electrode surface types. In comprehensive studies she progressed very far, showing, how this new materials science could be combined productively both with bioelectrochemistry of metalloproteins and metalloenzymes, and with electrochemistry of whole microbial cells with accompanying new electron transfer theoretical frames. As a particular merit, she was in charge of leading her group to develop actual working devices in the form of both novel type bioelectrochemical sensing devices and biofuel cells based on the new electrode materials that Jingdong introduced.

Jingdong gradually became a superb proposal writer. Her applications were always very sharply thought over, as it appeared, much rewarded by the funding agencies. Until the very end, she was also a superbly skilled and engaged supervisor of bachelor, master, and Ph.D. students, as well an excellent sparring partner for our postdoctoral fellows and external scientific visitors in the group, many of whom having later established themselves as independent researchers. She was highly revered by undergraduate students in our introductory courses. As you walked along the corridors approaching Jingdong's classroom or lab teaching, you could always please yourself by listening to her teaching voice with increasing enthusiastic strength as you got closer.

Jingdong is sadly missed by her group, her department and university, her friends and colleagues all over the world, and not in the least by her husband Dr. Qijin Chi and young son Daniel Chi. We are very grateful

to the journal *ChemElectroChem*, particularly the editor-in-chief of the journal, Dr. Kate Lawrence, and certainly to the many contributors to this special *ChemElectroChem* issue for their support and their many excellent contributions to the special issue.

Christian Engelbrekt

Bingwei Mao

Jens Ulstrup

Xinxin Xiao

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