

Preface

Recent Development of Mass Spectrometric Technologies in Asia and Oceania

Yu-Ju Chen¹ and Jentaie Shiea²

¹Institute of Chemistry, Academia Sinica

²National Sun Yat-Sen University

The first *Asia and Oceania Mass Spectrometry Conference (AOMSC)* organized by the Mass Spectrometry Society for Japan (MSSJ) was held in Tsukuba, Japan in 2010. The 2nd and 3rd AOMSC were held in Busan, Korea in 2011 and Kyoto, Japan in 2012; with the conferences organized by the Korean Society for Mass Spectrometry (KSMS) and MSSJ, respectively. The continuous effort on the 4th AOMSC, was hosted and organized by Taiwan Society for Mass Spectrometry (TSMS) in July 10–12, 2013, at the Taipei International Convention Center (TICC), Taiwan. More than 800 participants attended the conference, where they contributed 88 oral and 196 poster presentations and discussed current advances in mass spectrometry regarding fundamentals; instrumentation; methodology; interfacing to chromatographs; and a broad range of applications in emerging fields such as the environmental sciences, energy, food safety, forensics, nanomaterials, molecular imaging, clinic diagnoses, pharmaceuticals, biomedicine, quantitative proteomics, post-translational modifications, metabolomics, glycoproteomics, bioinformatics, and inorganic mass spectrometry.

The plenary lectures were delivered by Prof. Yuan-Tseh Lee (1986 Nobel laureate in Chemistry, Academia Sinica, Taiwan) and Mr. Koichi Tanaka (2003 Nobel laureate in Chemistry, Shimadzu Corp., Japan). Both Nobel laureates encouraged and inspired the audiences by sharing their experiences in their research careers and prospective for future research. Tutorial lectures, seminars were delivered by distinguished speakers who were recommended by the mass spectrometry societies in the Asia and Oceania regions, and a special lecture session was arranged for the winners of the TSMS research awards. Four workshops were held on the focus in glycoinformatics, sustainable sciences, food safety, and advanced mass spectrometric technologies.

Luncheon and vendors' seminars sponsored by mass spectrometry manufactures were arranged to offer the participants the first hand information of the newest mass spectrometric innovations and technologies. The welcome mixer and conference banquet appealed to all attendees with a variety of Western and Asian food, as well as culture performances such as the Lunar New Year lion dance, the "Techno Dancing Gods," water color-painting, clay sculpturing, and paper cutting, which gave the participants a taste of Taiwanese cultures.

Prior to the 4th AOMSC conference, a three day workshop, Young Scientists' Forum (YSF), was held at the Chien-Tan Youth Activity Center in Taipei to bring in new blood of MS and promote their networking in Asia and Oceania countries. More than 50 attendees from Australia, China, India, Japan, South Korea, Taiwan, and Thailand were accepted to attend the work-



shop. YSF created an environment for young scientists to make friends and exchange their research experiences with peers of similar ages and academic backgrounds in a less formal atmosphere. Discussions among the young scientists were encouraged through organizing the participants into groups. The foreign participants were able to learn more about Taiwanese culture during the forum through their local teammates. Travel award winners were selected from a list of submitted abstracts ranging from nanoprobe-based mass spectrometry to a characterization of the human lens lipidome. A professional career development forum was also hosted by the YSF advisors, during which they shared their career progressions and experiences.

In conjunction with the YSF, the 4th AOMSC organizing committee collaborated with the journal of *Mass Spectrometry* to publish a special issue on selected presentations in the conference. The special issue encompasses contribution to both fundamental and applications of mass spectrometry by the distinguished scholars from Asia and Oceania countries. We believe the research articles in this special issue will provide readers and scientists with an excellent snapshot of recent developments in mass spectrometric technologies highlighted in the regions. We wish to express our sincere appreciation to those who helped make the conference a successful event and this special issue a fruitful product. Specifically, we would like to give our acknowledgements to the conference organizers, sponsors, speakers and contributors, volunteers, and all participants. We hope you enjoy this special issue.



Dr. Yu-Ju Chen obtained her B.S. in chemistry from National Taiwan University (1992) and Ph.D. degree from Iowa State University (1997). After postdoctoral research work at the National Tsing Hua University, Dr. Chen joined the Institute of Chemistry of Academia Sinica in 1999. She was promoted to research fellow in 2010 and serve as deputy director in 2011 and director since September 2013. She also holds con-current adjunct professorships at 4 universities, including National Taiwan University. Her research focuses on methodology development of mass spectrometry-based proteomics by integrating novel nanomaterial, advanced mass spectrometry and bioinformatics. In particular, she is interested in applying these tools to delineate the membrane proteome and post-translation modifcome on cancer and stem cell biology. She has received domestic and international awards including Outstanding Young Investigator Award from Chinese Chemical Society (2006), Distinguished Young Chemists Award from Federation of Asian Chemical Societies (2007), Mr. Wu Ta-you Memorial Award from National Science Council (2008), Research Award for Junior Research Investigators from Academia Sinica (2008), Award for Outstanding Scholar of Taiwan Society for Mass Spectrometry (2011), Outstanding Young Scholar from Shu-Mu Foundation of Chemistry (2012), and Outstanding Research Award from National Science Council (2013). She is the chair of Human Proteome Organization (HUPO) Publication Committee, and also council member of HUPO since 2014, council member of Asia Oceania Human Proteome Organization and International Mass Spectrometry Foundation. She serves as the President of Taiwan Society for Mass Spectrometry (2013–2016) and the President of the Taiwan Proteomics Society (2009–2012). She is acting as editorial board member of the European Journal of Mass Spectrometry, Journal of Proteome Research and Frontiers in Analytical Chemistry. Dr. Chen has published more than 70 articles including Mol. & Cell Proteom., J. Proteome Res., Anal. Chem., JACS and PNAS.



Jentaie Shiea received his B.S. (1981) in Chemistry from National Chung-Hsing University, Taiwan and his M.S. (1988) and Ph.D. (1991) degrees in Chemistry from Montana State University, U.S.A. His thesis studies were related to microbial ecology, organic geochemistry, and analytical and physical chemistry. After finishing his postdoctoral training in 1991 at the Department of Material Science, Pennsylvania State University, he joined National Sun Yat-Sen University (NSYSU), Taiwan as a faculty member. He is currently a distinguished professor of Chemistry at NSYSU. His research focuses on (1) development of ambient ionization mass spectrometric techniques and applying them to the detection of the chemical compounds for food safety, forensic sciences, antiterrorism, pharmaceuticals, polymer sciences, and environmental chemistry; (2) interfacing mass spectrometry with HPLC, GC, CE, and TLC; and (3) applications of modern mass spectrometry and molecular imaging for clinical diagnosis. He owns 35 patents and has authored or co-authored more than 100 scientific publications, and has given more than 200 presentations at international scientific conferences. In the last decade, he has devoted himself to promoting mass spectrometric research in Taiwan and Asia. He was the president of Taiwan Society for Mass Spectrometry (TSMS) from 2009–2012 and has been an executive board member and the representative of Asia and Oceania (Region B) of the International Mass Spectrometry Foundation (IMSF) since 2009. He is currently a Fellow of the Royal Society of Chemistry (FRSC) and a board member of several government and university committees in controlled drugs, public health, natural sciences, and engineering and patent evaluation. He is the editorial or advisory board member of Mass Spectrometry, Anal. Methods, Int. J. Mass Spectrom., Cur. Chromatogr., ISRN-Spectroscopy, The Science World J., Technology, and is a guest editor of a special issue in Clin. Chim. Acta in 2012.