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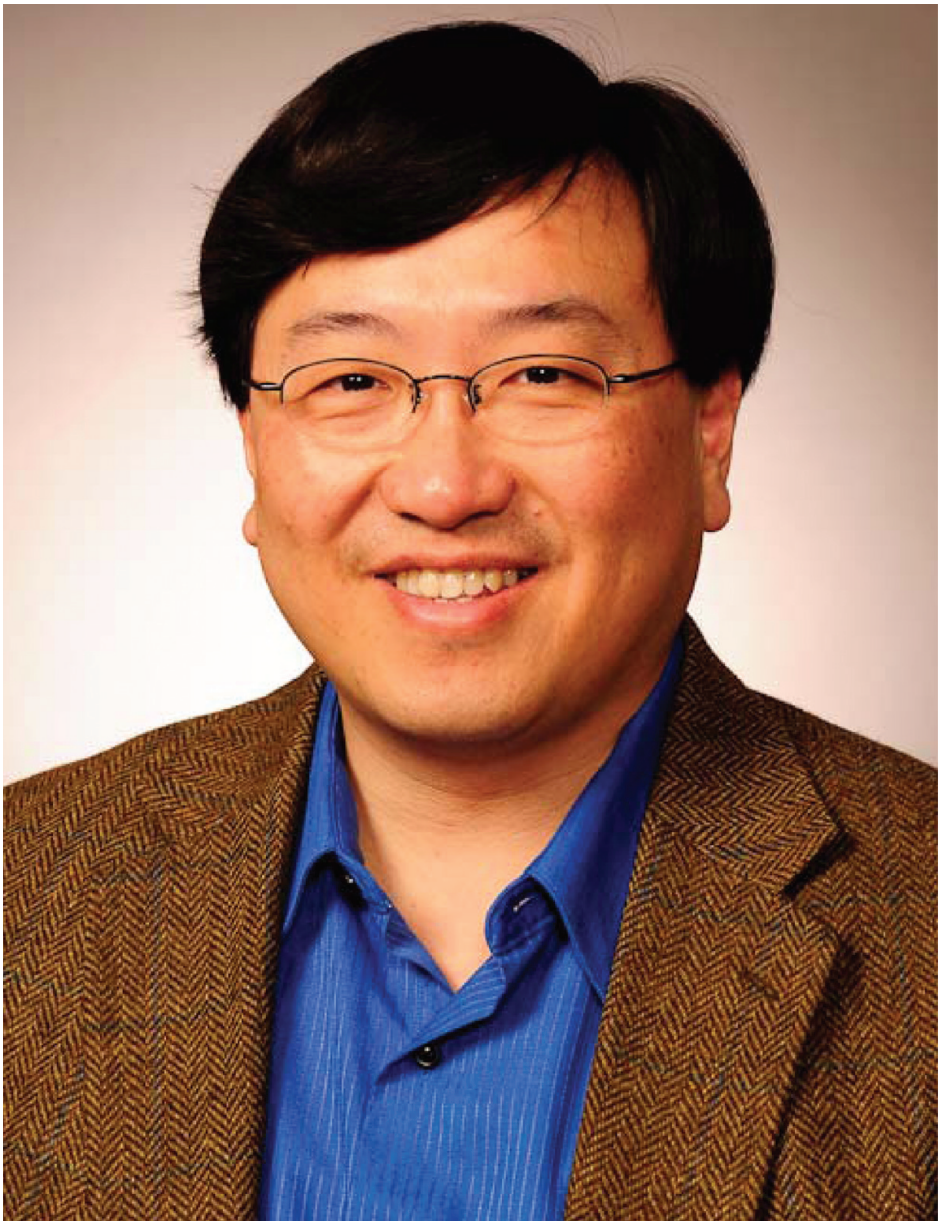

Preface to Memorial Issue in Honor of Professor Victor S.-Y. Lin

This issue of *ACS Catalysis* is a tribute to the contributions and influence that our friend, colleague, and collaborator, Victor S.-Y. Lin, had on the field of modern catalysis. Victor's sudden death at the age of 43 brought to an end an exceptional scientific career well before it reached its peak. Nonetheless, his outstanding talent, creativity and level of productivity will leave a lasting legacy. The articles included in this memorial issue comprise some of the main themes in modern heterogeneous catalysis, many of which were directly derived from Victor's work or influenced by Victor's lab over the past decade.

Victor received the bachelor's degree in chemistry in his native Taiwan, from National Chung-Hsing University in Taichung in 1990. He completed his Ph.D. degree in 1996 at the University of Pennsylvania, where he worked on the design and synthesis of novel supramolecular arrays of porphyrins under the direction of Michael J. Therien. Victor conducted his postdoctoral research

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with M. Reza Ghadiri at the Scripps Research Institute in La Jolla, California, working on the construction of novel porous silicon-based biosensors, in collaboration with Mike Sailor at the University of California—San Diego. He started his independent academic career in 1999 upon joining the Department of Chemistry at Iowa State University, where he rapidly rose to the rank of full professor in 2006. Whereas part of Victor's research effort continued to focus on the synthesis of biocompatible nanoporous structures and their applications in sensory and drug delivery systems, he also established a vibrant research program in catalysis, which used innovative design principles to produce multifunctionalized heterogeneous catalysts. In 2003, Victor joined the Catalysis Program at the U.S. Department of Energy's Ames Laboratory and, in 2007, became the director of the Ames Laboratory Chemical and Biological Sciences Program. He also held the position of the Director of the Center for Catalysis of the Institute for Physical Research and Technology. Victor was recognized for his accomplishments with the National Science Foundation CAREER Award; the ISU College of Liberal Arts and Sciences Award for Early Achievement in Research; the ISU Award for Mid-Career Achievement in Research; the Outstanding Technology Development Award from the Federal Laboratory Consortium; and the John D. Corbett professorship in Chemistry at ISU, bestowed on him in the spring of 2010.

Victor's impressive scientific legacy encompasses approximately 80 publications and 10 patents, including several seminal papers on controlling morphology of mesoporous silica nanoparticles and modification of their surfaces with multiple types of functional groups. These studies led to the development of composite materials with an unprecedented range of physicochemical properties for applications in heterogeneous catalysis, intracellular drug delivery, biosensing, and synthesis of biofuels. Victor's research effort in catalysis was focused on creating new types of 3-D catalysts that integrated the best features of homogeneous and heterogeneous systems. Several original synthetic approaches were demonstrated in his laboratory, highlighted by the development of pioneering strategies for selective pore functionalization and by achieving control over the morphology of mesoporous scaffolds composed of silica or other oxides. In addition to serving the role of catalyst support, these mesoporous materials were used as hosts for secondary functional groups designed to modify the activity or selectivity. Such multifunctional systems were used to demonstrate several catalytic principles, including the gatekeeping effect, and provided the first example of a biomimetic heterogeneous catalyst that cooperatively employs general acid and base catalytic residues. Very early on, these fundamental studies inspired practical applications on the industrial scale. Indeed, by using the acid and base functionalities in a calcium silicate mixed oxide, Victor demonstrated that it was possible to cooperatively catalyze the esterification of free fatty acids and the transesterification of oils to produce biodiesel from animal fat. On the basis of this work, he helped found a company, Catilin, to commercialize the use of such catalysts in the production of biofuels in a 0.5 million gallon/year pilot production facility.

Victor was also a superb educator. He trained 12 postdoctoral associates, 29 graduate students, and 8 undergraduates; countless others benefited greatly from his advice and guidance. Boundlessly enthusiastic and eager to share his ideas with group members and collaborators, he always greeted his students and colleagues with an infectious smile. The scientific community will miss Victor deeply, and his colleagues and friends will remember him as a model of excellence and integrity.

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