



Victor S.-Y. Lin

### Victor S.-Y. Lin (1966–2010)

Victor Shang-Yi Lin, a rising star in the inorganic nanomaterials chemistry community, passed away after a brief illness on May 4, 2010, at the age of 43.

Born in Taiwan, Victor received a BSc in chemistry from National Chung Hsing University in Taichung, Taiwan. In 1996, he earned his Ph.D. in chemistry from the University of Pennsylvania under the supervision of M. J. Therien, working on the synthesis and photophysical studies of highly conjugated multi-porphyrin systems.<sup>[1]</sup> He served as a Skaggs postdoctoral fellow at Scripps Research Institute in La Jolla, CA, where he developed porous-silicon-based optical interferometric biosensors with M. R. Ghadiri.<sup>[2]</sup> Victor joined the chemistry faculty at Iowa State University in 1999, and became a member of the Department of Energy's Ames Laboratory in 2002. He served as Director of the Ames Laboratory's Chemical and Biological Sciences Program since 2007, and was also appointed Director of the ISU Institute for Physical Research and Technology's Center for Catalysis. Earlier this year, he was named John D. Corbett Professor of Chemistry.

Victor Lin will be remembered as a creative chemist, an inspiring and caring mentor, a generous colleague, and a loving husband and father. He is best-known for his seminal contributions to the development and applications of mesoporous silica nanoparticles (MSNs), a term he coined to describe nanometer-sized mesoporous silica materials with a well-defined and controllable morphology. Not only did he develop reliable synthetic protocols for MSNs, but he also demonstrated the applications of this interesting class of nanomaterials in a variety of areas, including heterogeneous catalysis,<sup>[3]</sup> renewable energy,<sup>[4]</sup> biosensing,<sup>[5]</sup> and nanomedicine.<sup>[6,7]</sup>

In the area of nanomedicine, Victor envisioned the use of MSNs as nanoscale capsules that could interact with the cell milieu either as a smart drug delivery system or as a nano-factory. He liked to compare the behavior of this material with the 1966 science-fiction blockbuster "Fantastic Voyage", in which a submarine and its medical crew are miniaturized to microscopic scale and injected into the body of a dying scientist. Victor was the first to demonstrate the intracellular applications of MSN as a stimuli-responsive drug- and gene-delivery system.

Victor was profoundly interested in exploring the applications of MSNs and related materials in renewable energy areas, with particular focus on the exploration of cooperative catalysis within the confines of the MSN nanochannels. He developed bifunctional mesoporous calcium silicate mixed-oxide catalysts for the cooperative and economic

conversion of bio-based high-fatty-acid feedstocks into biodiesel, and founded a startup company, Catilin, to bring this technology to the market. Victor was also developing MSN materials for the production of ethanol from syngas, and for the harvesting of bio-oils from algae.

Victor was always generous in sharing his curiosity and excitement with his research group and collaborators. A poster in his office displayed the Albert Einstein quote "*Imagination is more important than knowledge*". He treasured the value of imagination and creativity, and always encouraged his junior co-workers to pursue their dreams. A former student and current collaborator said of Victor: "*He taught us to draw our dreams, to tie dreams little by little, piece by piece, to reach so far and beyond, and find ways we could never have guessed*". Victor was also generous to people outside his own research group, always greeting students and colleagues with a broad smile whether in his office, in the hallways of the ISU Chemistry Department, or in conference rooms at national and international meetings. Victor trained 12 post-doctoral associates, 29 graduate students, and 8 undergraduates; countless others benefited greatly from his advice and guidance.

Victor accomplished a great deal during his brief scientific career, and was recognized with an impressive array of professional honors. Beside his appointment as the second John D. Corbett Professor in Chemistry, Victor received the ISU College of Liberal Art & Sciences (LAS) Award for Achievement in Intellectual Property at the college's fall convocation. Victor was also recognized for his outstanding research contributions with a National Science Foundation CAREER Award (2003–2008), the LAS Award for Early Achievements in Research (2004), an Outstanding Technology Development Award from the Federal Laboratory Consortium (2005), and the ISU Award for Mid-Career Achievement in Research (2008). He also served on the Editorial Advisory Board of *Advanced Functional Materials*. Victor's research efforts resulted in 58 journal articles, 3 patents, and 10 patent applications during his tenure at ISU. He delivered more than 100 invited lectures, and his research as independent investigator has been cited more than 2500 times.

I had the privilege of knowing Victor well, both professionally and personally. In the summer of 2008, as visiting professors at the Catalysis Research Center at Hokkaido University in Sapporo, Japan, we had the pleasure of sharing an office. It was so much fun to discuss science with Victor, and to share a Sushi dinner with him and his family. Just two months ago, Victor and I had dinner together during the ACS National Meeting in San Francisco, and he spoke with great excitement of his upcoming formal installation as John D.

Corbett Professor. I simply could not believe the tragic news of his death, barely a month later. The scientific community will miss Victor deeply, and his students, colleagues, and friends will remember him as a model of excellence and loyalty.

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