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Tribute to Sheng Hsien Lin

This issue of *The Journal of Physical Chemistry A* is dedicated to Sheng H. Lin, Distinguished Research Fellow of the Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan.

This collection of articles from many of his students, postdocs, collaborators, friends, and colleagues is contributed in recognition of Lin's remarkable scientific accomplishments, and especially in honor of his contributions toward a molecular level understanding of many of the central issues in photochemistry, photophysics, and molecular nonlinear spectroscopy. The articles collected here are a manifestation of his wide range of scientific interests reflecting the endless stream-like enthusiasm in scientific activities that he has been involved in over the last 47 years.

S. H. Lin has made great contributions to the field of physical chemistry as a theoretician. His research over the years has focused on a broad range of subjects including transition state theory, radiationless transitions, external magnetic field effects, resonance Raman scattering, multiphoton transitions, photoinduced charge transfer and electronic energy transfer, vibrational energy relaxation and transfer, nonlinear spectroscopy, femtosecond chemistry and electron dynamics of molecules in strong fields. His focus has always been on the development of molecular theories for new observations of molecular phenomena.

One of Lin's remarkable contributions to physical chemistry is the formulation of a molecular expression for the rate of interconversion of electronic and vibrational energy. This radiationless process is now widely recognized to include internal conversion and intersystem crossing occurring in many molecular systems ranging from polyatomic molecules to photoactive biosystems. This remarkable theoretical development was made in 1966 and the rate constant was derived as a function of molecular parameters that can be obtained directly from *ab initio* molecular orbital theory calculations. It was not until about 30 years later that the rate constant could be rigorously computed using state-of-the-art *ab initio* calculations for real polyatomic molecules. This is just an example of how his molecular theories are useful after decades and also reflects the fact that his theoretical interest is strongly associated with realistic molecular models of real-world phenomena.

Lin has authored and coauthored over 670 publications and given many invited presentations of his original research. Since joining the faculty at Arizona State University, and the Institute of Atomic and Molecular Sciences, Academia Sinica, and the

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adjunct faculty at the Department of Chemistry, National Taiwan University, Lin has mentored many undergraduate students, graduate students, and postdoctoral researchers. He has always given exceptionally solid and outstanding lectures of physical chemistry to young students and these lectures are truly valuable treasures for the next generation of young scientists.

Many experimentalists have contacted him from all over the world asking for his theoretical help on their observed results. He is a broad-minded man and has always offered scientific helps to others as best as he can.

We express our thanks to all who have made this project possible, especially the authors who have contributed to this special issue. We are particularly grateful to Yoshiaki Teranishi, a postdoctoral research fellow in Lin's group, Masahiro Yamaki, a postdoctoral research fellow in Fujimura's group, and Xueming Yang, a Senior Editor in charge of this issue, for their help in organizing and facilitating this celebration of Sheng H. Lin's accomplishments.

We are honored to bring you this special issue of The Journal of Physical Chemistry A in honor of Professor S. H. Lin of the Institute of Atomic and Molecular Sciences, Academia Sinica on the happy occasion of Sheng's 70th birthday. We hope that you will enjoy this tribute to an outstanding scholar and educator.

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Guest Editors