Preface to the C. C. Yu Special Issue

On June 1st 2009, the international process systems engineering community lost one of its most beloved members. Cheng-Ching Yu passed away unexpectedly after a relatively short battle with liver cancer. At the time, C.C. (as he was known by everyone), a distinguished professor of chemical engineering at the National Taiwan University, was a member of the Editorial Advisory Board for this journal. And so, with contributions from many of C.C.’s closest friends and associates, my fellow associate editor, Larry Biegler, and I wrote an editorial in his memory which appeared in the August 19, 2009 issue of this journal. This special issue is a fulfillment of the promise made in that editorial; it is designed to serve as both a memorial and a celebration of the many accomplishments of C. C. Yu.

As has become customary in these special issues, this particular collection of more than 30 papers also covers a wide range of topics contributed by authors from around the world. The topics, which range from plant-wide control and production planning and scheduling, to sensitivity analyses and experimental designs for process identification, to the design and control of reactive distillation processes and solid oxide fuel cells, reflect perfectly C.C.’s varied interests and contributions; the authors, who come from North America, Europe, and of course Asia, attest to his international stature and influence.

As we noted in the earlier editorial, Professor Yu earned his Bachelor of Science degree in 1979 at Tunghai University, and M.S. and Ph.D. degrees from Lehigh University in 1982 and 1986, respectively, all in the field of Chemical Engineering, and with Professor William L. (Bill) Luyben as advisor. From 1986 until 2001, C.C. was a professor at National Taiwan University of Science and Technology, serving as the department chair from 1991 until 1997. He joined the faculty at National Taiwan University in 2001, and in 2006 was awarded a Distinguished University Professorship.

With research interests literally spanning much of the sub-specialty known as process systems engineering, Professor Yu broke new ground in the very important area of control systems analysis and design for reactive distillation, and was a pioneer in the theory and practice of measurement, modeling, analysis, and control in microelectronics manufacturing. He published over 120 technical papers and authored or coauthored two books: the 1999 book, Autotuning of PID Controllers: Relay Feedback Approach (with a second edition published in 2006), and the more recent book, Reactive Distillation Design and Control, which he coauthored with Bill Luyben. The many awards he received, which were listed in our previous editorial, include the Outstanding Research Awards from the National Science Council of Taiwan (1994, 1996, 2004), and the Y. P. Shih Award from the Chinese Institute of Chemical Engineers (2001). The technologies developed by him and his students have been transferred to various companies in Taiwan, including China Petrochemical Development Corporation; Advanced Control System Corporation; Taiwan Semiconductor Manufacturing Corporation (TSMC); and the Industrial Technology Research Institute (ITRI). In addition, C.C. held several important positions that helped shape the chemical engineering discipline...
in Taiwan. He was Director of the Chemical Engineering Division for the Department of Engineering and Applied Sciences at the National Science Council (2001–2003); Coordinator of strategic planning in chemical engineering research and development from (2004–2006); President of the Taiwan Institute of Chemical Engineers, (2006–2008); and President, Asian Pacific Confederation of Chemical Engineering (2008–2009).

This special issue is a particularly fitting tribute to a man who was an excellent citizen of the community at large, serving in many capacities, including session organizer and chair, and International Program Committee member for various conferences. In addition, from 1991 to 2006, he served as Editor of the Journal of the Chinese Institute of Chemical Engineers, and from 1994 to 2000, the Editor of the Journal of the Chinese Institute of Engineering. He was also one of the most active and reliable reviewers for many of the community’s journals. Early in 2009, he was appointed the IFAC Technical Committee co-Chair for the Chemical Process Control area; and at the time of his passing, he was a member of the Editorial Board of this journal, with a term that was to have lasted until 2010.

C.C. was respected worldwide for his intellect, but was equally well loved for his winsome personality. He developed an impressive network of regional and international collaborators and was the perfect host when these collaborators visited Taipei. As one of C.C.’s friends and collaborators, I still feel his loss at a personal level, even today. C.C. taught me many of the Mandarin Chinese words and phrases I know. We always shared a good laugh at our goodbye rituals at the departure lounges of airports whether in the U.S. or in Taipei, when, with my right fist planted firmly in the open palm of my left-hand, I would bow to him and say “Hou Hui Yu Qi” in the manner in which, according to him, ancient Chinese warriors greeted each other before parting ways. I join all of the authors in inviting you to enjoy this special issue; consider it the community’s collective right-fist-in-left-palm, with an accompanying bow, in acknowledgment and celebration of C.C.’s impact on process systems engineering in particular, and chemical engineering in general. C.C., “Hou Hui Yu Qi” old friend!

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Literature Cited
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