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In Memoriam

### Professor Xiaofeng Peng (1961–2009)



It is with great sadness that we note the passing of our friend and colleague, Professor Xiaofeng Peng of Tsinghua University, Beijing, China. Professor Peng passed away, after a sudden and brief illness, on the morning of September 10, 2009, in Beijing, at age 48. He is survived by his wife, Xuewen Fu, and his daughter, Yizhu Peng.

Professor Peng was a renowned scholar and educator, and at the peak of his career. He was the Chang Jiang Endowed Chair Profes-

or and the former Head of the Department of Thermal Engineering at Tsinghua University. He served on the editorial boards of various international and regional scientific journals, including *International Journal of Heat and Mass Transfer* and *International Communications in Heat and Mass Transfer*, *International Journal of Transport Phenomena*, *Experimental Heat Transfer*, *Heat Transfer Asian Research*, and a number of Chinese journals including *Chinese*

*Journal of Engineering Thermophysics*. He also served on numerous Chinese and international technical committees, and has been instrumental in fostering research collaborations in heat and mass transfer between Tsinghua University and many other universities and research institutions around the world.

Born on May 6, 1961, Professor Peng obtained his Bachelor's degree in 1983 and Doctorate with honors in 1987 under the supervision of Professor Bu-Xuan Wang, both from the Department of Thermal Engineering at Tsinghua University. He worked at Tsinghua University all through his career, as Lecturer (1987–1991), Associate Professor (1991–1995) and Professor (1995–2009). He served as Department Head from 1997 to 2002, and received the Chang Jiang Endowed Chair (a national professorship in China awarded by the Ministry of Education) in 2001. As Department Head, Professor Peng facilitated an unprecedented growth in research. Professor Peng was a strong advocate for collaborative research between China and the rest of the world. He held multiple visiting professorships, and engaged in active collaborations with numerous research institutions in China, USA, France and Korea.

In the short 22 years of his professional career, Professor Peng made far-reaching contributions in heat and mass transfer. His research spanned phase-change heat transfer and two-phase flows, interfacial transport phenomena, convective flow boiling, heat and mass transport in porous media, microscale heat transfer, and heat transfer under microgravity conditions. The "Peng and Wang" papers from the early 1990s are synonymous with early microchannel heat transfer research. One of his papers, "Convective Heat Transfer and Flow Friction for Water Flow in Microchannel Structures," published in this journal (vol. 39, 1996), has been cited over 200 times, and has been recognized as being among the seminal papers on the subject. Professor Peng then successfully expanded his research spectrum to a broader range of topics in heat and mass transport, with original experimental and theoretical studies of bubble dynamics in pool and flow boiling, heat and mass transport in saturated and unsaturated porous media, and interfacial dynamics at the liquid–solid–vapor tri-phase region. More recently, Professor Peng turned his attention to the study of super-insulating nanoporous materials. He formulated a theoretical framework for understanding the heat transport mechanisms in such materials by considering coupled electron–phonon–molecule–photon interactions. Professor Peng authored or co-authored over 600 articles in peer-reviewed journals and conference proceedings covering a wide range of topics including thermodynamics, heat transfer, and thermal engineering, which have been widely cited.

His outstanding research accomplishments won him many prestigious national honors, such as the Science and Technology Research Award (1989), National Natural Science Award (1990), Award for Research Achievement (1996), First Prize Award for Natural Scientific Research Achievement (2005). Professor Peng was invited to deliver plenary presentations at many international conferences, including the 10th and 11th International Heat Transfer Conferences (1994, 1998), Boiling 2000 – Phenomena & Emerging Applications (2000), the 3rd International Conference on Cooling and Heating Technology (2007) and the 18th International Symposium on Transport Phenomena (2007). In addition to his fundamental research, Professor Peng devoted a significant amount of his efforts to transferring technical knowledge to industrial technologies. Many of the new technologies developed by Professor Peng have been adopted by leading energy industries in China. One example is the vapor–liquid separator he developed for condensers in HVAC applications, which could increase energy efficiency by 30% compared to currently used equipment.

An even greater legacy than his impressive research achievements, however, is Professor Peng's overwhelming contribution in his role as educator and mentor to students. He came to be beloved by a large cohort of students who consider themselves fortunate to have studied with him. They remember his care and attention to their lives and research, sometimes even at the expense of time spent with his family. Professor Peng always seemed at his happiest when spending time with his students. At Tsinghua University, he was well known for his high academic and professional standards as well as his openness to new ideas from young students. He initiated and promoted the Undergraduate Research Program in the Department and encouraged many talented students to explore scientific research early in their educational experience. Professor Peng supervised over 33 M.S. and 19 Ph.D. graduates and countless undergraduate students. Incredibly, his Ph.D. students won the prestigious Tsinghua Excellent Doctoral Dissertation Award in three consecutive years (2003, 2004 and 2005). The best testament to his influence on his students and his broad impact on the world is the number of his students who now hold academic positions at prominent universities and research institutions in China and around the world. Professor Peng received the National Gold Award for Teaching from the Bao-Gang Education Foundation in 2001.

In the many notes of remembrance and condolence that have poured in since his passing, Professor Peng uniformly evokes memories of hard work, creativity and enthusiasm, modesty, generosity and kindness, and a philosophical desire for the pursuit of knowledge, and its lasting impact on his students, colleagues and friends. The energy and passion with which he pursued his research reflected an impatience and anxiety about how much there was to do and how little time was available (far too short, as it turned out).

Well, dear friend, you did accomplish much – now, rest in peace. Your memories and legacy will live on within many.

We recognize that words, however kind, cannot mend the heartache his family must feel, but those of us who care and share their loss wish them comfort and peace of mind and hope that they may find strength in the love of family and in the warm embrace of friends.

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