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# International Journal of Heat and Mass Transfer

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In Celebration

## Professor Kwang-Tzu Yang on his 80th birthday



It may come as a surprise that Professor Kwang-Tzu Yang celebrated his 80th birthday on November 12, 2008, to those who know him and his work. Over the years, Professor Yang, or KT as he is fondly known, has made significant contributions to both the field and the community of thermal sciences and engineering. This must thus be another proof that continuous dedication to efficiency upgrade of heat transfer and knowledge flow processes creates the reversible effect of Thermodynamics, in this case in the form of de-ageing.

Professor Yang was born on November 12, 1928 in China, where he completed his early education. He moved to the USA in 1948 and received his BS (1951) and MS (1952) degrees in mechanical engineering and his PhD (1955) degree in heat transfer under the supervision of the late Professor Max Jakob, all from the Illinois Institute of Technology. He then joined the University of Notre Dame and became the Viola D. Hank Professor of Engineering in 1985. In 1998, he officially retired from the university and became the Viola D. Hank Professor Emeritus. However, not to anybody's surprise, he does not believe in restful retirement. He has maintained his office at the University of Notre Dame, where he continues with many of his academic and professional activities, including the supervision of doctoral students, the writing of research proposals and technical papers, the editorship of journals, providing reviews and recommendation letters, and the organization of conferences. During his long stay at the University of Notre Dame, Professor Yang served the university in various capacities, including the chairmanship for the Department of Mechanical

Engineering and the Department of Aerospace and Mechanical Engineering over a period of 10 years. He received many awards for his distinguished teaching, research and service, such as the Special Presidential Award, the Graduate School Award and the Faculty Award.

Professor Yang's contributions to research and engineering practice are distinguished by their breadth, originality, comprehensiveness and impact. He is not afraid to go wherever his interests may take him. It is this approach that has led him to make many landmark contributions in what, to a casual observer, might appear to be a diversity of fields. Examples of these areas include natural convection, heat exchanger dynamics, hydronic systems, application of artificial neural networks, oscillating flows, forest fires, modeling of large fires and fire whirls, tribology, food and materials processing, thermal systems and technology transfer. Yet to him it is all simply a search for understanding and a part of the unity of knowledge. He also views teaching and research as integrated and non-separable units. It is typical that, if he has to teach a topic, his interest is aroused and research inevitably follows. The converse is also true, in that if he does research on a topic he will also want to teach it. Indeed, teaching plays an equal, if not more important, role in Professor Yang's thinking, and he is always looking for new ways of stimulating the interest of his audience and of getting them to participate in the quest for understanding. Over the years, Professor Yang has pioneered many new research topics by searching the interplay among different disciplines, by questioning existing concepts and principles, by uncovering

fundamental underlying mechanisms, by mapping domains of applicability, by formulating methods to quantify phenomena, and by combining technical insight, theoretical analysis and focused experiments. Hence, he has secured over 96 projects funded by diverse federal funding agencies and industries and has published over 240 technical papers, many of which have been widely used by researchers all over the world. In recognition of his outstanding contributions to the field of thermal sciences and engineering, he was awarded the ASME Heat Transfer Memorial Award in 1981, the JSME Foreign Researcher Award in 2002 and ASME-AIChE Max Jakob Memorial Award in 2007. Professor Yang has also been in great demand as a consultant by many organizations and industries like Dodge Division, Rockwell International, Tyler Refrigeration Corporation and Nuclear Regulatory Commission.

Professor Yang has inspired and guided more than 70 graduate students, including 33 PhD students, many of whom are well-known scholars and leaders in their own way today. In the classroom, Professor Yang is always very dynamic to convey his enthusiasm in the subject and teaching to students and to stimulate their interest in the subject and learning. His clear and methodical lectures, simple charm, unassuming manner and dedication to work have made him extremely popular with students. He has also given keynote lectures at various national and international conferences and invited lectures in many universities, industries and organizations around the world. His lectures always take the audience on a fascinating and enjoyable journey with his physical insight and deep understanding. In 1978, for example, Professor Yang was invited to China to teach a 6-week short course on Recent Advances in Thermal Convection to a group of over 100 professors in Heat Transfer from a large number of universities in China who went to Xi'an Jiaotong University to get an idea on what were the latest advances in Convection Research outside China. At that time, very little was going on in HT research in China, and Professor Yang opened the door for them to the beautiful world of Convection and inspired HT Research in the New China.

Professor Yang's contributions to the heat transfer community are equally outstanding and far reaching. He has made a very positive and lasting impact on the direction and quality of heat transfer research through his dedicated editorial work as the editor or advisory board member of several prestigious journals, as the Senior Technical Editor of the *Journal of Heat Transfer* (1980–1985) and the North American Editor of the *International Journal of Experimental Thermal Science, Fluid Mechanics and Thermodynamics*

(1986–1994) in particular. His service is continually sought on advisory bodies, with participation at NSF, ASME, ASEE, DOE, and the International Center of Heat and Mass Transfer. He has co-organized several important conferences and chaired numerous professional society activities, including the Executive Committee of the Heat Transfer Division of ASME. His technical advice is sought and valued throughout the international community of thermal sciences and engineering. In recognition of his many important and selfless contributions to the society, Professor Yang was awarded the ASME Dedicated Service Award in 1993 and the ASME Heat Transfer Distinguished Service Award in 1998.

What most friends, students and colleagues find particularly impressive about Professor Yang is his humility, sense of humor, pleasant demeanor, and willingness to help. These qualities, which have become rare in the busy and competitive world we live in today, are the very essence of KT's life. It is wonderful to see such an eminent member of the community willing to advise and help younger researchers and students. This willingness to share his time, knowledge and experience has had a significant impact on the careers of many young scientists and engineers. He has been a great role model to many and certainly the community will gain immensely if other leading scholars like KT were to follow the path paved by him in this regard.

On the occasion of his 80th birthday, his friends, colleagues, former students and editors of this journal throughout the world would like to thank Professor Yang for his outstanding contributions and dedicated service to the community and wish him, his wife, Heather, and his entire family good health, prosperity and happiness.

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Available online 26 March 2009