MAX JAKOB MEMORIAL AWARD

The 2006 Max Jakob Award was presented to

Dr. Kwang-Tzu Yang

Presented at
2007 ASME-JSME Thermal Engineering Conference and Summer Heat Transfer Conference
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Vancouver, BC, Canada

Kwang-tzu Yang received his BS (ME, 1950) and MS(ME,1951) Degrees from the Illinois Institute of Technology in Chicago. He continued his Doctoral studies at the same institution in Heat Transfer under the eminent Professor Max Jakob and received his Ph.D. in 1955 just prior to the death of his mentor. Shortly thereafter, he joined the Faculty of Mechanical Engineering at the University of Notre Dame where he remained and was appointed the Viola D. Hank, Professor of Engineering in the Department of Aerospace and Mechanical Engineering at Notre Dame in 1985. He retired from active teaching in 1998 and became the Viola D. Hank Professor Emeritus of Engineering, while his research activities continue to this day.

Professor Kwang-tzu Yang has had very broad research interests in heat transfer and has made substantial contributions through his extensive publications and contributions to numerous book chapters and review articles including keynote presentations at national and international conferences. He is internationally known for his research in buoyancy-driven flows, particularly related to flow instability, bifurcation, and transition to chaos in bounded cavities, and complex-flow interactions including thermal radiation relevant to materials processing. Also worthy of note are his fundamental studies in complex fire phenomena related to building fires, along with the safety and risk issues, and the more recent studies in forest fires. One significant contribution of this research is the development of innovative approaches and methodologies for treating the fire dynamics. He is also recognized for his path-finding research dealing with behaviors of thermal systems, rather than with just single phenomena. His pioneering efforts to develop methodologies for the analysis of complex thermal systems, along with their dynamic behaviors and effective control. The realization of the importance of dynamic thermal systems in real-world applications also led him to deeply explore the use of soft computing and artificial intelligence methodologies. Significant strides have already been made by him and his collaborators, and have been well received by the broad heat transfer community. The research studies of Professor Yang and his co-workers have already led to the publication of well over 250 papers with about one-half in archival journals.

He has received many honors for his research in and contributions to the world-wide heat transfer community. He is now a Life Fellow of ASME and received the Heat Transfer Memorial Award in 1981. He also received the Foreign Researcher Award of the Japan Society of Mechanical Engineering (JSME) in 2002, and the ASME Heat Transfer Division Distinguished Service Award in 1998. He was also appointed

as the Russell Severance Springer Distinguished Visiting Professor at UC Berkeley in 1998, the NAVSEA Research Chair Professor of ONR at the Naval Postgraduate School in 1985-86, and the Japan Ministry of Education Special Visiting Professor at the Tokyo Institute of Technology in 1995-96. He also served as the Senior Technical Editor of the ASME Journal of Heat Transfer (1980-85), the North-American Continent Editor of the International Journal, Experimental Thermal and Fluid Sciences (1986-93), and currently as members of the Editorial Advisory Boards of the International Journal of Heat and Mass Transfer and Communications in Heat and Mass Transfer. In addition, he has been very active in the professional activities of ASME, particularly in its Heat Transfer Division, where he served as the Chairman of the Executive Committee in 1989-90. He has also been well connected with government agencies and industry, having served as consultants to NSF, DOE, NRC, ONR, and industrial companies such as Rockwell International, Moding Manufacturing, and Carrier Corporation, In these activities he always strongly placed emphasis on the important synergism between real applications and academic research.

Professor Kwang-tzu Yang has traveled widely throughout the world over more than 40 years of his professional career to give invited lectures and professional advice to academic and research institutions and industry. As strongly advocated by his mentor, the late Professor Max Jakob before him, such application-oriented activities play important roles to inspire, channel, and foster important and relevant fundamental research in the thermal sciences. This guidance has been instilled into the minds of all graduate students who came to study under Professor Yang that included 35 doctoral students and 31 MS students, all of whom have gone on to become well-established professionals, knowing the true synergism between research and practice.