Statistical Engineering Division Seminar

Friday March 31, 1995 11:00 am
Polymers Bldg., Room B245
NIST
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The Transfer Function of the Differential Mobility Analyzer: Numerical and Experimental Investigations

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The differential mobility analyzer (DMA) is capable of high resolution measurement and classification of airborne submicrometer particles. It has been used as a standard method of particle sizing in the development of a $0.1 \mu m$ particle diameter Standard Reference Material (SRM). The performance of the DMA can be obtained by evaluating its transfer function in the size range of interests. In this seminar, we will describe recent numerical and experimental investigations of the transfer function of four DMAs; namely, TSI standard and TSI short (U. of Minnesota), Hauke (U. of Vienna), and SMEC (French Nuclear Protection and Safety Institute). Numerical and experimental results have been obtained for particles down to 6 nm diameter, where the diffusional broadening of the transfer function becomes significant.

David Y. H. Pui is Professor and Associate Director, Particle Technology Laboratory, Mechanical Engineering Department, University of Minnesota. He has a broad range of research experience in aerosols and has contributed to the fundamental studies of aerosol charging and neutralization, transport and deposition, filtration, as well as the applied topics of instrumentation, industrial dust collectors, air pollution and micro-contamination studies. Hehas over 150 publications in the aerosol field and has served as a member of the editorial board of Journal of Aerosol Science . He is a co-developer of several widely used aersol sampling and measuring instruments. He served as the Secretary, Technical Program Chair, and Tutorial Program Chair for the American Association for Aerosol Research (AAAR), a technical advisor to the Institute of Environmental Sciences (IES) Working Group 100 to revise Federal Standard 209D, and Technical Committee Chair of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). He is currently a member of the Executive Board of Gesellschaft füer Aerosolforschung (GAeF). Dr. Pui is a recipient of the presitigious Max Planck Research Award, 1993 and the Smoluchowski Award, 1992.

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