

Rohsenow Lecture in Heat and Mass Transfer

Thermal Management at the Extremes



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The heat generated by electronics is a big problem for a variety of exciting products and systems including smartphones, electric vehicles, and satellites. “Extreme” is a unifying theme, from nanometer features and 10+ kW chips to severe materials heterogeneity. This seminar will summarize these challenges and our progress on research topics including electron and phonon transport at the transistor level, nanostructured packaging materials, and microfluidic two-phase heat sinks. This talk will also highlight two decades of collaborations with the semiconductor industry and silicon valley startups.

Warren Max Rohsenow was an active member of the MIT faculty from 1946 to 1985. As a researcher, educator and leader, he made outstanding and lasting contributions to the engineering profession in general and thermal power systems in particular. His fundamental and applied research in nearly all modes of heat transfer is highly respected throughout the world and underpins many modern developments in the thermal power industry. The classroom teaching of Professor Rohsenow was noted for its strong emphasis on fundamentals and practice-oriented problems. His teaching experience began in the early 1940's at Yale University where he taught classes in thermodynamics and heat power. In 1946, he joined MIT as assistant professor of mechanical engineering, which marked the beginning of a new era for the department in the field of heat transfer. His boiling and condensation research had a lasting impact on both the theory and the practice of phase change heat transfer and its application to thermal power technology. He was a Fellow of the American Academy of Arts and Science (1956) and a member of the National Academy of Engineering (1975). An accomplished pianist, he kept a piano in his MIT office, which he would occasionally roll out into the corridor for departmental parties. In 1985 after 39 years of service, Professor Rohsenow retired from MIT. The Rohsenow Kendall Heat Transfer Laboratory at MIT is named in his honor.

Refreshments will be served before the seminar.
Please contact Tony Pulsone at pulsone@mit.edu with any questions.