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**SIDNEY YIP**

**Professor Emeritus of Nuclear Science and Engineering**

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**Education**

B.S. (Mechanical Engineering, 1958), M.S. (Nuclear Engineering, 1959), and Ph.D. (Nuclear Engineering, 1962), all from the University of Michigan, Ann Arbor

**Academic Positions**

Professor Emeritus, MIT (2009 - )

Professor (2000 - 2009), Department of Materials Science and Engineering, MIT, Professor (1973 - 2009), Associate Professor (1969-73), Assistant Professor (1965-69), Department of Nuclear Engineering, MIT, Research Associate (1963-65, Cornell University), Postdoctoral Fellow (1962, University of Michigan)

**Honors**

Fellow, American Physical Society, 1973; John Simon Guggenheim Fellow, 1972-73; U.S. Senior Scientist Award, Alexander von Humboldt Foundation, Germany, 1979; Outstanding Alumnus, University of Michigan, 1993; Spira Award for Distinguished Teaching, M.I.T., 1996; Fellow, Institute of Physics, 2004; Tsun Lee Lecture Award 2005, Chinese Academy of Sciences, 2006 Nuclear Engineering Distinguished Technical Lecturer, North Carolina State University, 2006, Lyman Handy Lecturer, University of Southern California, 2007

**Research and Teaching Accomplishments**

Early-career research in transport phenomena, liquid state dynamics and neutron scattering, coauthored three monographs. Later research in theory, modeling and atomistic simulation studies of thermal and mechanical properties of crystalline solids, edited several monographs and a two-volume handbook on materials modeling. Forty plus years of experience culminated in an interest to understand at molecular level a class of slow dynamical (aging) phenomena in complex but technologically significant materials, such as hardening of cement paste, stress corrosion fatigue of metals in harsh oil-well environment, and creep in irradiated nuclear reactor fuel. About three hundred journal publications in the fields of statistical physics, materials science, and atomistic modeling and simulations. Taught nuclear physics and multiscale materials modeling and simulations. Supervised 15 masters and 44 doctoral students.

**Books and Edited Volumes**

R. K. Osborn and S. Yip, *Foundations of Neutron Transport Theory* (Gordon Breach, New York, 1967).

H. Boutin and S. Yip, *Molecular Spectroscopy with Neutrons* (MIT Press, Cambridge, 1968).

S. H.Chen and S. Yip, eds, *Spectroscopy in Biology and Chemistry - Neutrons, X-Rays and Lasers* (Academic Press, New York, 1974).

J.-P. Boon and S. Yip, *Molecular Hydrodynamics* (McGraw-Hill, New York, 1980), Dover reprint 1990.

D. Wolf and S. Yip, eds, *Interface Materials* (Chapman and Hall, London, 1992).

S. Yip, ed, *Handbook of Materials Modeling* (Springer, New York, 2005).

S. Yip, ed, *Scientific Modeling and Simulation* (Springer, New York, 2008).