

Francis F. Chen, Professor Emeritus

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Education

Ph.D. 1954 Physics, Harvard University
M.A. 1953 Physics, Harvard University
A.B. 1950 Astronomy, Harvard University

Professional Experience

1994-present Professor Emeritus, UCLA
1969 Professor, UCLA
1985 Visiting scientist, Australia and Japan
1977 Visiting scientist, Lausanne, Switzerland
1962-63 Visiting scientist, Fontenay-aux-Roses, France
1954-69 Senior Research Physicist, Princeton Plasma Physics Laboratory

Honors and Awards

1948 Phi Beta Kappa, Junior 8; Wendell Scholar, Class of '50
1968 Fellow, American Physical Society
1980 Fellow, IEEE; Life Fellow, 2003
1983 Chairman, APS Division of Plasma Physics
1994 IEEE Plasma Science and Applications Award
1995 APS Maxwell Prize
1999 Fellow, Institute of Physics, UK
2009 The Plasma Prize, AVS Plasma Science and Technology Division
2010 Fellow, AVS

Research Fields

1. Experimental high-energy physics: π -p scattering at 1 GeV.
2. Magnetic confinement fusion: stellarator experiments.
3. Plasma diagnostics, especially Langmuir probes, lasers.
4. Basic plasma physics: anomalous diffusion, drift waves, Q-machines, sheaths, gas discharges, plasma waves and instabilities, rf sources.
5. Inertial confinement fusion and laser-plasma interactions: theory and expt. on stimulated Brillouin and Raman scattering, optical mixing, filamentation, and high-density plasma sources.
6. Laser accelerators and related topics.
7. Low temperature plasma physics for industrial applications; helicons.
8. Plasma thrusters for spacecraft

Professional Activities (partial)

1972-77 Chairman, Fusion Advisory Committee, Electric Power Research Institute
1975 Member, Hafstad Committee for Laser Fusion
1981 Founding member, University Fusion Association
1993-94 Chair, Naval Studies Board Panel on Plasma Processing

Selected publications

F.F. Chen, *Introduction to Plasma Physics and Controlled Fusion*, 2nd ed., Vol. 1: "Plasma Physics" (Plenum Press, New York, 1984).
F.F. Chen, *An Indispensable Truth, How fusion power can save the planet* (Springer, New York, 2011).