

PEOPLE

[Faculty](#)[Research Staff](#)[Postdocs](#)[Administrative Staff](#)[Women in NSE](#)[Meet Our Students](#)**Ian H. Hutchinson**

Professor of Nuclear Science & Engineering

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[website](#)**Education**

B.A. (Physics), Cambridge University (1972)

Ph.D. (Engineering Physics), Australian National University (1976)

Research

Controlled fusion and plasma physics. Tokamak experiments, especially plasma momentum transport, MHD instability suppression and measurement, real-time plasma control, plasma radiation, boundary phenomena. Basic plasma physics, especially interactions of flowing plasmas with solid objects. Computational plasma physics.

Recent Publications

1. Leonardo Patacchini and Ian H. Hutchinson "Forces on a spherical conducting particle in $E \times B$ fields", Plasma Phys. Control. Fusion, 53, 065023 (2011)
2. B. LaBombard, J. L. Terry, J. W. Hughes, D. Brunner, J. Payne, M. L. Reinke, I. Cziegler, R. Granetz, M. Greenwald, I. H. Hutchinson, J. Irby, Y. Lin, B. Lipschultz, Y. Ma, E. S. Marmor, W. L. Rowan, N. Tsujii, G. Wallace, D. G. Whyte, S. Wolfe, S. Wukitch, G. Wurden, and Alcator C-Mod Team, "Scaling of the power exhaust channel in Alcator C-Mod" Phys. Plasmas, 18, 056104 (2011)
3. I H Hutchinson "Nonlinear collisionless plasma wakes of small particles" Phys. Plasmas, 18, 032111 (2011)
4. I H Hutchinson and L Patacchini "Flowing plasmas and absorbing objects: analytic and numerical solutions culminating 80 years of ion-collection theory" Plasma Phys. Control. Fusion, 52, 124005 (2010)
5. McDermott R M, Lipschultz B, Hughes J W, Catto P J, Hubbard A E, Hutchinson I H, Granetz R S, Greenwald M, LaBombard B, Marr K, Reinke M L, Rice J E, Whyte D "Edge radial electric field structure and its connections to H-mode confinement in Alcator C-Mod plasmas" Phys. Plasmas, 16, 056103 (2009)
6. Marmor, E, et al. "Overview of the Alcator C-Mod Research Program" Nuclear Fusion 49 104014 (2009)

Teaching

22.105 Electromagnetic Interactions

22.071j Electronics, Signals, and Measurement

22.611j Introduction to Plasma Physics

22.62 Fusion Energy

Awards

- Ruth and Joel Spira Award for Distinguished Teaching
- 2008 Chairman, American Physical Society Division of Plasma Physics

Labs + Groups[Plasma Science & Fusion Center](#)[MIT Alcator C-Mod](#)**Recent News**[NSE Fusion Program Moves Beyond Plasma, Towards Practical Power-Plant Issues](#)[A New Look at Nuclear Power](#)[A reality check on nuclear fusion at MIT](#)[NSE Briefing on the Japan nuclear crisis](#)[download bio](#)[bio](#)

