

B I B L I O G R A P H Y

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Ia. Journal Articles

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- laser plasmas*. 30th EPS Conference on Contr. Fusion and Plasma Phys., St. Petersburg, 7-11 July 2003 ECA Vol. 27A, P-3.82
- [66] Y. Raitses, D. Staack, L. Dorf and N. J. Fisch, *Experimental study of acceleration region in a 2 kW Hall thruster*, 39th AIAA/ASME/SAE/ASEE/JPC Huntsville, Alabama (July 2003).
 - [67] K. D. Diamant, J. E. Pollard, R. B. Cohen, Y. Raitses, and N. J. Fisch, *Plume Characteristics of the PPPL Segmented Electrode Hall Thruster* 2003-5159, 39th AIAA/ASME/SAE/ASEE/JPC Huntsville, AL (July 2003).
 - [68] A. Smirnov, Y. Raitses, N. J. Fisch, *Plasma Measurements in a 100 W Cylindrical Hall Thruster*, 39th AIAA/ASME/SAE/ASEE/JPC Huntsville, AL (July 2003).
 - [69] A. Smirnov, Y. Raitses, N. J. Fisch, *Electron transport and ion acceleration in a low- power cylindrical Hall thruster*, paper 04-4103, 40th AIAA/ASME/SAE/ASEE/JPC Fort Lauderdale, Florida (July, 2004).
 - [70] L. Dorf, Y. Raitses, V. Semenov, and N.J. Fisch, *Anode fall formation in a Hall thruster*, paper 04-3779, 40th AIAA/ASME/SAE/ASEE/JPC Fort Lauderdale, Florida (July, 2004).

VI. Major Unpublished Reports

- [1] N. J. Fisch, *New Techniques for Electrophoretic Separation in Conducting Fluids*, Exxon Research and Engineering Report CR.5BW.84 (April, 1984) 61 pp.
- [2] R. J. L. Chimenti, N. J. Fisch, and R. P. Reeves, *Electrophoretic Separation of a Dispersed Phase From Conductive Hydrocarbon Liquids*, Exxon Research and Engineering Report, CR.6JL.84 (October, 1984) 64 pp.
- [3] A. Fruchtman and N. J. Fisch, *Enhanced Magnetic Field Penetration in a Plasma Opening Switch Configuration*, Weizmann Report WIS-91/35/JUN-Phys, 10 pp.

VII. Committee Reports

- [1] *An Assessment of the Department of Energy Office of Fusion Energy Sciences Program* Prepared by the National Research Council Fusion Sciences Assessment Committee (C. F. Kennel, chair), National Academy Press, Washington DC (2001).
- [2] Nathaniel J. Fisch, Francis Holm, Eugene Keating and Radovan Kohout, *Plasma Energy Pyrolysis System*, Technical Peer Review Report for the Office of Science and Technology, Office of Environmental Management, Department of Energy, ASME/CRDT-RP-02-35, 12 pp. (March, 2002).

VIII. Selected Invited Papers and Talks

- [1] *Wave-Driven Currents*, Bull. Am. Phys. Soc. **25**, 894 (October,1980), Twenty-Second Annual Meeting of the American Physical Society Division of Plasma Physics, San Diego, CA (November, 1980).
- [2] *RF Current-Drive*, Conference on Plasma Heating, Nagoya, Japan (February, 1981).
- [3] *Operating Tokamaks With Steady-State Toroidal Current*, Fourth Topical Conference on RF Plasma Heating, Austin, TX, (February, 1981), in Proc. Fourth Topical Conference on RF Plasma Heating, ed. R. D. Bengtson and M. E. Oakes (U. Texas, Austin, 1981) B1.
- [4] *Pushing Particles With Waves*, Lecture Series, Tokyo University, Tokyo, Japan, April, 1981.
- [5] Discussion Leader, Gordon Conf. on Plasma Physics, Ventura, CA (June, 1981).
- [6] *Current Generation in Toroidal Plasma*, Third Joint Grenoble-Varenna International Symposium on Heating in Toroidal Plasma, Grenoble, France (March, 1982).
- [7] *Theory of RF Current Drive*, Bull. Am. Phys. Soc. **28** 727 (April, 1983), paper HB1. American Physical Society General Meeting, Washington DC, (April, 1983).
- [8] *Theory of RF Current Drive*, Spring College on Radiation in Plasma at International School for Theoretical Physics, Trieste, Italy (June, 1983).
- [9] *Physics of RF Current Drive* (Review Paper), Twenty-sixth Annual Meeting of the American Physical Society, Division of Plasma Physics, Boston, MA (October, 1984).
- [10] *Lectures on Current-Drive, Course and Workshop on Applications of RF-Waves to Tokamak Devices*, Varenna, Italy (September, 1985).
- [11] *Useful Theoretical Calculations for Current-Drive Experiments*, US/USSR Topical Meeting on Current Drive, Moscow, USSR (June, 1986).
- [12] *Information Content of Transient Synchrotron Radiation*, Sherwood Conference on Plasma Theory, San Antonio, TX (April, 1989).
- [13] *Information Content of Transient Synchrotron Radiation*, Thirty-first Annual Meeting of the American Physical Society, Division of Plasma Physics, Anaheim, CA (November, 1989).
- [14] *Radiation from Mildly Relativistic Electrons in Tokamak Plasmas*, Top. Conf. on Research Trends in Nonlinear and Relativistic Effects in Plasmas, La Jolla, CA (February, 1990).
- [15] *Two-laser Approach to Shorter Wavelength X-ray Lasing*, Top. Conf. on Research Trends in Nonlinear and Relativistic Effects in Plasmas, La Jolla, CA (February, 1990).

- [16] *Diffusion of α -particles by Lower Hybrid Waves*, Int. Top. Conf. on New Ideas in Tokamak Confinement, La Jolla, CA (January, 1992).
- [17] *Diffusion of Energetic Alpha Particles by Intense Lower Hybrid Waves*, Sherwood Conference on Plasma Theory, Santa Fe, NM (April, 1992).
- [18] *Review of Current Drive in Tokamaks*, Europhysics Top. Conf. on rf Heating and Current Drive of Fusion Devices, Brussels, Belgium (July, 1992).
- [19] *Diffusion of Energetic Alpha Particles by Intense Lower Hybrid Waves*, IAEA, Wurzburg, Germany (September, 1992). invited poster.
- [20] *Diverting Alpha Power to Fuel Ions*, DT workshop, Princeton, NJ (February, 1994).
- [21] *Diverting Alpha Power to Fuel Ions*, Transport Task Force Meeting, Dallas, TX (April, 1994).
- [22] *Utility of Extracting Power from Alpha Particles by Waves* (selected for oral presentation), 21st European Physical Society Meeting, Montpellier, France (July, 1994).
- [23] *Channeling Alpha Particle Power in Tokamaks*, Thirty-sixth Annual Meeting of the American Physical Society, Division of Plasma Physics Minneapolis, Minnesota (November, 1994).
- [24] *Channeling Alpha Particle Power*, IAEA Technical Meeting on Alpha Particles, Princeton, NJ (April, 1995).
- [25] *Wave-driven hot-ion-mode tokamak reactor*, Conference on Advanced Approaches to Economical Fusion Power, Monterey, CA (September, 1995).
- [26] *Uses of Microwaves in Tokamaks*, Series of Three Lectures, 48th Scottish Universities Summer School in Physics, St. Andrews, Scotland (August, 1996).
- [27] *Prospects for Alpha Channeling: Initial Results from TFTR*, 16th IAEA Fusion Energy Conference, Montreal, Canada (October, 1996).
- [28] *A Tutorial on Alpha Channeling*, 25th European Physical Society Meeting, Prague, Czech Republic (July, 1998).
- [29] *Fusion in Plasmas Far from Thermodynamic Equilibrium*, Symposium in honor of Harold P. Furth, Princeton (June, 1999).
- [30] *Physics of Alpha Channeling and Related TFTR Experiments*, IAEA TCM Rf Driven Steady State Devices, Kitakyushu, Japan (October, 1999).
- [31] *Compression of High Power Laser Pulses in Plasma*, Innovative Confinement Concepts Workshop 2000, Berkeley CA (February, 2000).
- [32] *Compression of High Power Laser Pulses in Plasma*, Fast Ignitor Workshop, San Diego CA (November, 2000).
- [33] *Compression of High Power Laser Pulses in Plasma*, International Conference on Progress in Nonlinear Science, dedicated to the 100-th anniversary of Alexander A. Andronov, Nizhny Novgorod, Russia (July, 2001).

- [34] *Compression of High Power Laser Pulses in Plasma*, Second International Conference on Superstrong Fields in Plasma, Varenna, Italy (August, 2001).
- [35] *Compression of High Power Laser Pulses in Plasma*, Israel Physical Society Meeting, Tel Aviv, Israel (December, 2001).
- [36] *Robust Raman Amplification of High Power Light in Plasma*, Forty-fourth Annual Meeting of the American Physical Society, Division of Plasma Physics Orlando, Florida (November, 2002).
- [37] *Raman Amplification and Compression of Ultra-short Pulses in Plasmas; a Successor Technology to CPA?* Physics and Quantum Electronics XXXIII, Snowbird, Utah (January, 2003).
- [38] *Current drive by radio-frequency waves in inhomogeneous plasma*, Keynote Talk, 6th Israeli Conference on Plasma Science and Applications, Holon, Israel (February, 2003).
- [39] *Driving Currents in Plasma with Waves*, Litwin Lecture, Keynote talk at the Workshop for the Frontier Physics Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Chicago, Il (November, 2003).
- [40] *Mechanisms of Plasma Propulsion*, Plenary Lecture, IEEE 2004 International Conference on Plasma Science, Baltimore, Md. (June, 2004).
- [41] *Compression of High Power Laser Pulses in Plasma by Raman Backscattering*, Plenary Lecture, Frontiers of Nonlinear Physics, St. Petersburg, Russia (July, 2004).
- [42] *Mechanisms of Plasma Propulsion*, Keynote Lecture, Miniconference on Plasma Propulsion, APS Division of Plasma Physics, Savannah, GA (November, 2004).
- [43] *Mechanisms of Electric Propulsion*, Review Talk, 16th Topical Conference on RF Power in Plasmas, Park City, UT (April, 2005).

X. Congressional Testimony

- [1] *Fusion Energy Science Research*, Statement to the House Subcommittee on Energy and Water Development (February 29, 1996). Prepared by Stewart C. Prager, Richard D. Hazeltine and Nathaniel J. Fisch (Chair, Chair-elect and Vice-Chair of APS-DPP).

XI. Obituaries

- [1] Nathaniel J. Fisch and Robert J. Goldston, *Thomas H. Stix*, Physics Today (March, 2001).
- [2] Nathaniel J. Fisch, Stewart Prager, and Robert Rosner, *Christof Litwin*, Physics Today 55 (7), 79 (July, 2002).
- [1] Nathaniel J. Fisch, T. Kenneth Fowler, Edward Frieman, and Robert J. Goldston, *Harold P. Furth*, Physics Today (February, 2003).