

nuclear technology/Fusion

CONTENTS / JANUARY 1982—VOL. 2, NO. 1

- 7 Comments / *George Miley*

OVERVIEW

- 9 Physics of Fusion Fuel Cycles / *J. Rand McNally, Jr.*
29 The Impact of Engineering Constraints on the Feasibility of Advanced Fuel Fusion Reactors / *J. Reece Roth*

TECHNICAL PAPERS

FUSION FUEL CYCLES

- 43 Deuterium-Based Plasmas as a Source for Helium-3 / *E. Greenspan, G. H. Miley*

BLANKET ENGINEERING

- 55 Catalyzed Deuterium-Deuterium and Deuterium-Tritium Fusion Blankets for High Temperature Process Heat Production / *Magdi M. H. Ragheb, Behzad Salimi*
73 Neutronic Calculations for the Conceptual Design of an In-Reactor Solid Breeder Experiment, TRIO-01 / *R. L. Childs, T. A. Gabriel, R. A. Lillie*

PLASMA ENGINEERING

- 80 The Effect of Quadrupole Fields on Particle Confinement in a Field-Reversed Mirror / *D. B. McColl, E. C. Morse, J. Hammer, H. L. Berk*
85 Ideal and Resistive Magnetohydrodynamic Stable Startup and Burn for the Reversed-Field Pinch Reactor / *Richard A. Nebel, Ron W. Moses, Dennis W. Hewett, George H. Miley*

DIVERTOR SYSTEMS

- 91 Oscillating Limiter Concepts / *Ming Lun Xue, Tien-Fang Yang*
96 Hybrid Bundle Divertor Design / *Glenn Bateman, P. Theriault*

(Continued)

ON THIS COVER

This month's cover is taken from the overview paper by J. Rand McNally, Jr., and is a schema of deuterium-tritium plasma burn characteristics versus ion kinetic temperature.

CONTENTS / JANUARY 1982—VOL. 2, NO. 1

(Continued)

NEUTRAL BEAM INJECTION

- 104** Possible Nonhydrogen Neutralizers for High Energy D⁺ and H⁺ Beams / *L. R. Grisham, D. E. Post*

ICF CHAMBER ENGINEERING

- 110** Response of Liquid Lithium Layers to Neutron and X-Ray Pulses / *Ihor O. Bohachevsky*

FIRST-WALL TECHNOLOGY

- 120** Simulation of Fusion First-Wall Environment in a Fission Reactor / *A. M. Hassanein, G. L. Kulcinski, G. R. Longhurst*

DEPARTMENTS

1 Authors

133 Meeting Reports

Comments on the Fifth Course on Unconventional Approaches to Fusion / *Bruno Brunelli*

Report from the Tenth European Conference on Controlled Fusion and Plasma Physics / *G. H. Miley*