

# nuclear technology/fusion

## CONTENTS / JANUARY 1983—VOL. 3, NO. 1

- 5 Comments / *George Miley*

### OVERVIEWS

- 6 Design Description of the Fusion Engineering Device / *Don Steiner, Charles A. Flanagan*
- 53 On the Role of Fusion-Fission Hybrids in the Nuclear Future of the United States and the Western World / *S. I. Abdel-Khalik*
- 73 Scoping of Oil Shale Retorting with Nuclear Fusion Reactors / *Terry R. Galloway*

### TECHNICAL PAPERS

#### FUSION REACTORS

- 89 The OHTE Reactor Concept / *Teruo Tamano*

#### ENERGY STORAGE, SWITCHING, AND CONVERSION

- 98 Test Results on Plasma Direct Converters / *William L. Barr, Ralph W. Moir*

#### TRITIUM SYSTEMS

- 112 A Mathematical Simulation Procedure for a Multistage-Type Water/Hydrogen Exchange Column in Tritium System / *Masahiro Kinoshita, Yuji Naruse*

#### EXPERIMENTAL DEVICES

- 121 Multi-MeV  $\text{Li}^{\circ}$  Beam as a Diagnostic for Fast Confined Alpha Particles / *Larry R. Grisham, Douglass E. Post, David R. Mikkelsen*

#### BLANKET ENGINEERING

- 129 Preliminary Neutronic Calculations for Fusion Blanket Testing in the Engineering Test Reactor / *A. Jerry Scott, Daniel E. Wessol, Jerry L. Judd*

(Continued)

#### ON THIS COVER

The main limiter ICRH heating module plus experimental modules found in the FED torus assembly envisioned by D. Steiner and C. A. Flanagan.

# CONTENTS / JANUARY 1983—VOL. 3, NO. 1

(Continued)

## MAGNET SYSTEMS

- 137 Magnetic Field Errors in Quadrupole Tandem Mirrors / *E. B. Hooper, Jr.*

## PLASMA ENGINEERING

- 144 Anomalous Correlation and Diffusion in Microfields of Magnetoactive Plasmas / *Horst E. Wilhelm*

## TECHNICAL NOTE

### ICF CHAMBER ENGINEERING

- 149 Fatigue Crack Growth in Inertial Confinement Fusion Reaction Chamber Components / *John H. Pitts*

## DEPARTMENTS

- 1 Authors
- 152 Book Reviews  
Inertial Confinement Fusion / reviewed by *Glenn R. Magelssen*  
Physics of Laser Driven Plasmas / reviewed by *Peter Hammerling*  
Plasma Astrophysics (Vols. I and II) / reviewed by *Donald B. Batchelor*
- 157 Meeting Reports  
Summary of the Symposium on the Production and Physics of Highly Charged Ions, Stockholm, Sweden, June 1-5, 1982 / *Anders B ar ny*  
Report on the 5th International Conference on Plasma/Surface Interactions in Controlled Fusion Devices, Gatlinburg, Tennessee, May 3-7, 1982 / *Robert A. Langley*
- 160 Letter to the Editor  
Topical Areas for *NT/F* Articles / *Ehud Greenspan*
- 161 Corrigendum