.

PREFACE, M.M. Cohen 1
EXECUTIVE SUMMARY
Executive Summary 5
Program
Participants 21
SUMMARY OF EACH GROUP
(1) and (6)
(2) Outgassing Properties 40
(3) High Heat Flux Experiments 43
(4) Sputtering, Synergisms and Erosion Processes
(5) Recycling and Tritium Inventory 62
(7) Modelling
(8) Engineering and Design Aspects
(9) Advanced Carbon Based Material 83
PRENARY SESSION
Opening talk, M.M. Cohen 87
Plasma Surface Interactions in Compact Ignition Design, M.A. Ulrickson
Some Considerations on Plasma Facing Materials in Tokamak Fusion Devices, Y. Murakami 100
Experience with Graphite in JET, K.J. Dietz
U.S. Efforts on Graphite and Carbon Related Material Studies, K.L. Wilson
Japanese Efforts on Characterization of Isotopic Graphite Material for Fusion Reactor, T. Yamashina149
Carbon erosion processes for CIT and ETR applications, A.A. Haasz . 156
Semi-empirical equation for modelling of chemical erosion of graphite, N. Itoh 166
Comment on plasma facing material studies on ETR, A. Miyahara 182
Application of graphite materials to the next generation machine, M. Seki

ISSUES OF EACH TOPIC

Some brief remarks on several critical aspects of graphite data base for fusion energy applications, W.P. Eatherly	
Characterization of Graphites and C-C composites, T. Oku	
Sandia livermore conditioning studies, K.L. Wilson	
Thermal outgassing of various kinds of graphite, Y. Kubota	
 On gas uptake of coated and bare graphite during exposure Hydrogen and deuterium retention in wall samples of JET, W. Ecksrein	
Absorption and desorption of D_2 on graphite, H. Atsumi and M. Miyake 273	
High heat flux tests on C-materials, J. Linke	
 Disruption simulation experiments on graphite by H⁺-beam at the 10MW neutral beam injection test stand of the IPP Nagoya 	
2) Runaway-electron linear accelerator experiments, H. Bolt 285	
Thermal Shock and Fracture Toughness Considerations for Graphite in Tokamak Fusion Reactors, R.T. McGrath	
High flux plasma bombardment of graphite, Y. Hirooka	
Assessment of graphite for limiter/divertor and first wall tiles in CIT and ETR-type machines, A.A. Haasz	
Ion-induced sputtering and interfacial reaction of metals or metal- carbides deposited on graphite at high temperature, K. Morita 328	
Chemical erosion of graphite and diamond materials due to low energy hydrogen bombardment, R. Yamada	
Comments on erosion of graphite, V. Philipps	
Thermal desorption process and surface roughness of POCO graphite irradiated by hydrogen ion beam, T. Hino	
Estimation retention, permeation and recycling, T. Tanabe	
Tritium inventory, K.L. Wilson 361	
Trapping-release behaviors of hydrogen isotopes in/form graphite Modification by the presence Fe impurity, K. Ichikawa 384	
Hydrogen permeation though graphite, M. Yamawaki	
Comments on recycling and hydrogen inventory, V. Philipps	
Some consideration on selection criteria for graphite as fusion reactor materials, Y. Oku	

Presentation on graphite technology, W.P. Eather

Neutron irradiation tests for graphites and low-3 J. Linke

Runaway electron analysis for tore supra, R.T. Mo

Fusion application of C-C composites, T. Uchikawa

Problems with criteria for material selection and M. Shibui

Active cooling with swirl tube enhancement with tore supra modular design, R.T. McGrath

 CO_2 laser beam test of an actively cooled firstgraphite-clad SiC tile, Y. Gotoh

Limiter heat loads in TFTR due to disruptions, M.

Design aspects of in vessel components, K.J. Die

Experiment on first wall carbon coating-focusing Concentration, Y. Sakamoto

Properties of carbon coating films produced by g discharges, T. Hino

ly	424
Z-ceramics,	433
cGrath	435
a	441
d failure assessment,	444
application to the	452
wall element with	468
.A. Ulrickson	475
tz	498
Hydrogen	501
low, RF and ECR	507