
U.S. - Japan Workshops

**Q-111: Development of Plasma Facing Components
and Materials for Next Large Fusion Devices, and
Q112: Vacuum and First Wall Technology for Fusion
Devices**

Sea Lodge Hotel, La Jolla, California
Feb. 28-March 2, 1990

Agenda

Tuesday, Feb 27: 6:00-8:00 pm. Welcome reception, La Jolla Room Page
1

Wednesday, Feb. 28

9:00 Welcome and Introductory Remarks A. Miyahara (NIFS) 11
M. Cohen (DOE)

Session 1.1: Recent PFC Experiments on Large Devices

9:20 TFTR M. Ulrickson (PPPL) 19
9:50 DIII-D G. Jackson (GA) 33

10:20 **Break**

10:35 JT-60 M. Seki (JAERI) 43
11:05 Compact Helical System A. Sagara (NIFS) 53

11:30 Discussion of recent JET beryllium results and comparisons of
graphite vs beryllium tokamak operation 71

12:00 **Lunch**

Session 1.2: PFC Materials for Future Plasma Devices

1:30 FER M. Seki (JAERI) 79
1:55 ITER R. Watson (SNL) 103

2:20 CIT J. Davis/J. Haines (MDAC) 119
2:45 LHD N. Noda (NIFS) 131

3:10 **Break**

Session 1.3: Neutron Effects on Carbon Materials

3:25 Changes of Physical and Chemical
Properties T. Tanabe (Osaka U.) 147

3:50 Tritium Inventory in Neutron Irradiated
Graphite and Beryllium K. Wilson (SNL) 159

4:15 Neutron Irradiation Degradation of Carbon
Related Materials T. Maruyama (TIT) 171

4:40 The Effects of Neutron Irradiation on the Structure
and Properties of Graphites T. Burchell (ORNL) 181

5:05 CFC Irradiation Results from FFTF G. Hollenburg (PNL) 181

Session 1.4: Discussion and conclusions of 1st day presentations

5:30-6:00

Thursday, March 1

Session 2.1: Innovative Concepts for Power and Particle Control

9:00	Overview of Workshop on Innovative Concepts	R. Nygren	(SNL).....	209
9:30	The Gaseous Divertor Concept	T. Yang	(MIT).....	219
9:50	Innovative Edge-Physics Control Techniques Developed in PISCES-A	L. Schmitz	(UCLA).....	229

Session 2.2: Status of High Z Materials for PFC's

10:10	High Z Materials for ITER	D. Smith	(ANL).....	257
10:35	Break			
10:50	Recent Results of Thermal Shock Tests on Metals	M. Ogawa	(JAERI)....	269
11:15	Comments on High Z Materials			

Session 2.3: Alternate Low Z Plasma Facing Materials

11:30	Beryllium Technology Issues	J. Whitley	(SNL).....	283
11:50	Evaluation of Bulk-Boronized Graphite	Y. Hirooka	(UCLA).....	291
12:10	Lunch			
1:30	Development of Bulk-Boronized Graphite and Postbombardment Thermal Desorption	T. Sogabe	(Toyo T.)... 299	
1:50	Chemical Erosion of Boron-Carbide	T. Haasz	(U. Toronto)	309
2:10	Manufacturing and Evaluation of Carbon Materials	T. Tanabe	(NRIM)....	313

Session 2.4: Erosion and Hydrogen Studies

2:30	High Temperature Erosion of Graphite	R. Nygren	(SNL).....	323
2:50	Retention of Hydrogen and Tritium in Graphite	T. Haasz	(U. Toronto)	333
3:10	A Proposal for PSI Experiments in the TRIAM Tokamak	Y. Hirooka	(UCLA).....	345
3:40	Break			

Session 2.5: Engineering Issues for PFC's

4:00	Critical Heat Flux Issues for ITER	J. Koski	(SNL).....	355
4:25	Bonding and Joining of PFC's	M. Shibui	(Toshiba)...	367
4:50	Design of the DIII-D Advanced Divertor	C. Baxi	(GA).....	373

Session 2.6: Summary and Conclusions of Day 2

5:10-5:30

Banquet: Aboard the M.S. Zumbroda in San Diego Bay

6:30	Bus leaves Sea Lodge			
7:00	Zumbroda leave Glorietta Bay, Coronado			
10:00	Zumbroda returns to Glorietta Bay			
10:30	Bus returns to Sea Lodge			

Friday, March 2

Session 3.1: Vacuum Vessel Design for Large Devices

9:00	Honeycomb Structure	M. Shibui	(Toshiba)...	385
9:25	Hot Sizing Method	K. Okada	(Mitsubishi).	393
9:50	Vacuum Vessel for JT-60	S. Kajiura	(Hitachi) ...	405
10:15	Break			

Session 3.2: Testing Facilities and Test Results

10:30	Recent PMTF Testing	C.D. Croessmann	(SNL).....	425
11:00	JEBIS	M. Seki	(JAERI)....	437
11:30	Thermomechanical Performance and Characterization of Different Boron/Carbon Materials	J. Linke	(KFA).....	447
12:00	Hot Cell Facility Updates	J. Linke	(KFA).....	463
		C.D. Croessmann	(SNL).....	465
12:15	Test Facility for Actively Cooled LHD-PFC	Y. Kubota	(NIFS)....	469
12:35	Inverse Analysis of Defect Shapes by the Potential Method	Y. Iwamura	(U. Tokyo)..	479
12:55	Lunch			
2:00	Wrap-up and tours of DIII-D			

Notice: Will those giving presentations please give copies of your talk to the conference secretary for incorporation into the workshop proceedings. Thank-you for helping make this an interesting and valuable workshop.