

“PFC Status & Directions”

Jeffrey N. Brooks

Plasma Facing Components Steering
Committee



PFC Meeting Princeton
May 9-11, 2005

PFC Steering Committee

Task: Guide work, priorities,
budgets

Members:

J. Brooks (ANL) -Chairman

G. Nardella -DOE

R. Bastasz (SNL)

R. Doerner (UCSD)

A. Hassanein (ANL)

T. Rognlien (LLNL)

D. Ruzic (UIUC)

R. Maingi (ORNL)

R. Majeski (PPPL)

N. Morley (UCLA)

G. Tynan (UCSD)

M. Ulrickson (SNL)

C. Wong (GA)

Communications

A) PFC Meetings 2/year

B) PFC Steering Committee – Conference call Monthly

C) PFC Personnel contacts with:
Materials community
OFES Theory group
Edge Plasma Coordination group
US-Japan workshops

PFC Web Site:

http://fusion.anl.gov/ALPS_Info_Center/

Webmaster: Bob Schmidt
(ANL)

bob@anl.gov

**Send Bob by 5/16/05 your
current presentation for posting**

Programmatic Issues

- **PFC program \approx 2/3
ITER/Enabling-Technologies
(solid materials), 1/3 ALPS**
- *ALIST NSTX “Module A” (static lithium) experiment \sim FY06 at PPPL. Module B (flowing lithium) implementation and priorities-under discussion.*

**Agenda for Plasma Facing Components (PFC) Meeting
May 9-11, 2005
Princeton NJ**

Monday May 9, 2005

Session 1: PFC Opening Session 8:30-9:00 am

- Welcome – Bob Kaita (PPPL)
- PFC-Steering Committee Chairman Report – Jeff Brooks (ANL)
- DOE Report – Gene Nardella (DOE)

Session 2: Tokamak Experiments (C. Wong Chair) 9:00 am-12:00 n

9:00-9:30 am	Jerome Pamela (JET/EFDA) <i>JET PFC issues</i>
9:30-9:45 am	Tim Gray (PPPL) <i>CDX-U equilibrium studies</i>
9:45-10:00 am	Dick Majeski (PPPL) <i>Recent results from CDX-U and progress towards LTX</i>
10:00-10:30 am	Bruce Lipshultz (MIT) <i>Effect of removing boron from C-MOD</i>
10:30-10:45 am	Break
10:45-11:00 am	Steve Allen (LLNL) <i>Recent DIII-D edge studies</i>
11:00-11:20 am	Charles Skinner (PPPL) <i>Carbon and Dust in ITER; Risks, Consequences and Opportunities</i>
11:20-11:40 am	Dmitry Rudakov (UCSD) <i>Observations of naturally occurring and introduced carbon dust in DIII-D</i>
11:40-12:00 noon	Discussion—tokamak experiments

12:00-1:00 pm Lunch

Session 3: Plasma Edge/PMI Modeling (T. Rognlien, J. Brooks, Chairs) 1:00–2:00 pm

1:00-1:15 pm	Zeke Insepov (ANL) <i>Modeling and analysis of temperature-dependent lithium erosion</i>
1:15-1:30 pm	L. Zepeda-Ruiz (LLNL) <i>Modeling carbon sputtering and plasma sheath chemistry</i>
1:30-1:45 pm	Todd Evans (GA) <i>Progress on kinetic modeling of lithium transport with MCI</i>
1:45-2:00 pm	Discussion-Plasma/edge PMI modeling

Session 4: ITER/US-PFC Work/Issues (G. Nardella, T. Rognlien Chairs) 2:00-5:30 pm

2:00-2:20 pm	Ned Sautoff (PPPL) <i>ITER PFC needs-US Response Overview</i>
2:20-2:40 pm	Tom Rognlien (LLNL) <i>ITER edge plasma characteristics with convective transport</i>
2:40-3:00 pm	Jeff Brooks (ANL) <i>Beryllium erosion/transport from ITER main chamber wall and validation progress</i>
3:00-3:20 pm	Ahmed Hassanein (ANL) <i>Plasma transient ITER PFC analysis</i>
3:20-3:35 pm	Break
3:35-3:45 pm	Bob Bastasz (SNL) PFC US Test Facilities list/overview
3:45-3:55 pm	Tom Rognlien (LLNL) PFC US Codes list/overview
3:55-4:15 pm	Clement Wong (GA) <i>Overview of recent DIII-DiMES activities</i>
4:15-4:35 pm	Russ Doerner (UCSD) <i>PISCES ITER-simulation experiments</i>
4:35-4:45 pm	Dave Ruzic (UIUC) <i>ELM Simulator experiments</i>
4:45-4:55 pm	Dennis Youchison (SNL) <i>Heat transfer and cracking in low density plasma sprayed Be armor</i>
4:55-5:05 pm	Neil Morley (UCLA) MHD modeling work for ITER test blanket module
5:05-5:30 pm	ITER US-PFC discussion

5:30 PM Adjourn

[Monday 7 PM, PFC Conference Banquet at the Penang Malaysian and Thai Restaurant, 635 Nassau Park Blvd. Route 1 near Home Depot and Borders Books]

Tuesday May 10**Session 5: PMI Laboratory Experiments (R. Bastasz, Chair) 9:00–11:15 am**

9:00-9:20 am	Matt Baldwin (UCSD) <i>Be/W mixed material experiments</i>
9:20-9:40 am	Jean Paul Allain (ANL) <i>Lithium-based mixed surface experiments</i>
9:40-9:55 am	Bob Anderl (INL) <i>Status of TPE</i>
9:55-10:10 am	Bob Bastasz (SNL) <i>Hydrogen flux diagnostic</i>
10:10-10:25 am	Break
10:25-10:40 am	Matt Coventry (UIUC) <i>Liquid tin sputtering experiments</i>
10:40-10:55 am	Travis Gray (UIUC) <i>Status of ELM simulating plasma gun</i>
10:55-11:15 am	Discussion - PMI Lab Experiments

Session 6: Heat Transfer and Fluid Flow (R. Nygren Chair) 11:15-12:00

11:15-11:30 pm	Richard Nygren (SNL) <i>Heat handling capability of W-rod tiles in C-MOD</i>
11:30-11:45 pm	Dennis Youchison (SNL) <i>High heat flux testing of a lithium-cooled heat sink</i>
11:45-12:00 noon	Discussion – Heat transfer and fluid flow

12:00-1:00 pm Lunch

Session 7: SBIR/STTR-Progress reports on funded projects (D. Youchison Chair) 1:00-2:30 pm

1:00-1:15 pm	Martin Pattison, Metaheuristics LLC Phase-II: <i>Computation of MHD flows using the Lattice Boltzman Method</i>
1:15-1:30 pm	Ramakanth Munipalli, Hypercomp, Inc. Phase-I&II: <i>Applications and development status of HIMAG as a tool in liquid metal MHD problems in nuclear fusion</i>
1:30-1:45 pm	Scott O'Dell, Plasma Processes, Inc. Phase-I: <i>Slow flowing liquid lithium using engineered surfaces</i>
1:45-2:00 pm	Robert Stubbers, Starfire Industries Phase-I: <i>Progress on the ELM Simulating Plasma Gun</i>
2:00-2:15 pm	John Moschella, HYTech Research Inc. <i>Tunable hetrodyne interferometer to measure atomic hydrogen in tokamak plasmas</i>
2:15-2:30 pm	Discussion-SBIR/STTR projects

2:30-2:45 pm Break

Session 8: PFC Institution FY06 Planned Work Overview (R. Maingi Chair) 2:45-5:30 pm

2:45-3:00 pm	M. Ulrickson, R. Bastasz -SNL
3:00-3:15 pm	G. Tynan, R. Doerner - UCSD
3:15-3:25 pm	A. Hassanein - ANL
3:25-3:35 pm	C. Wong - GA
3:35-3:45 pm	R. Majeski, R. Kaita - PPPL
3:45-4:00 pm	Break
4:00-4:10 pm	D. Ruzic -UIUC
4:10-4:15 pm	T. Rognlien - LLNL
4:15-4:25 pm	R. Maingi - ORNL
4:25-4:35 pm	N. Morley - UCLA
4:35-5:30 pm	Discussion FY06 & General PFC Work/Issues

5:30 PM Adjourn

{Tuesday 6:30 PM, PFC Steering Committee (Dinner) Meeting in Class of 1952 Room (A03) in Frist Campus Center on the Princeton University Campus}
