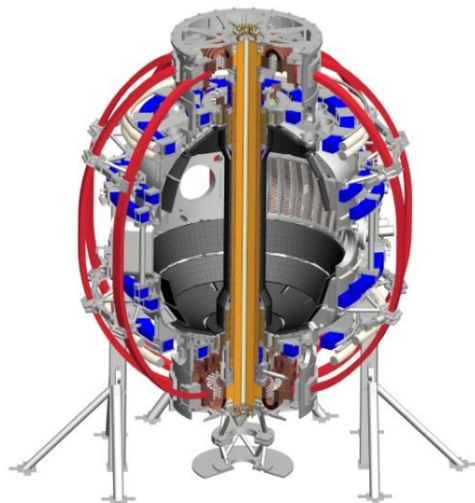


Materials and PFCs Topical Science Group Introduction and Agenda

MA Jaworski, C Skinner, JP Allain, B Wirth

*Coll of Wm & Mary
Columbia U
CompX
General Atomics
FIU
INL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Lehigh U
Nova Photonics
ORNL
PPPL
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Tennessee
U Tulsa
U Washington
U Wisconsin
X Science LLC*

**NSTX-U Research Forum
PPPL
February 24-27, 2015**



*Culham Sci Ctr
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
U Tokyo
JAEA
Inst for Nucl Res, Kiev
Ioffe Inst
TRINITI
Chonbuk Natl U
NFRI
KAIST
POSTECH
Seoul Natl U
ASIPP
CIEMAT
FOM Inst DIFFER
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep*

M&P Agenda 1/2

- 9:00 – 9:14 • Introduction - Jaworski

XMP and XP presentations (2 hours total)

- 9:14 – 9:22 • MAPP Commissioning XMP (Allain)
9:22 – 9:30 • B-zation optimization XMP (Skinner)
9:30 – 9:38 • High-Z reference discharge development XMP (Jaworski)

XP Group 1: Milestone R16-2 preparation

- 9:38 – 9:46 • Establish heat transmission pathways... (Jaworski)
9:46 – 9:54 • Leading edge power loading... (Gray)
9:54 – 10:04 • Boundary diagnostic optimized... (Soukhanovskii)
10:04 – 10:12 • Behaviour of high-Z impurities... (Reinke)
10:12 – 10:20 • Comparison of material migration... (Nichols)
10:20 – 10:28 • ELM effects on mixed material... (Nichols)
10:28 – 10:40 **Break**

M&P Agenda (2/2)

XP Group 2: M&P TSG Thrusts 1 and 2

- 10:40 – 10:48 •Surface Science (Koel)
- 10:48 – 10:56 •Textured Mo surface (Skinner)
- 10:56 – 11:04 •Ex-situ IBA of targets... (Wright)
- 11:04 – 11:14 •Connecting MAPP measurements... (Scotti)
- 11:14 – 11:22 •Periodic evaluation of PFC... (Scotti)
- 11:22 – 11:30 •Understanding the longevity... (Scotti)

- 11:30 – 11:40 **Break (~10 minutes)**

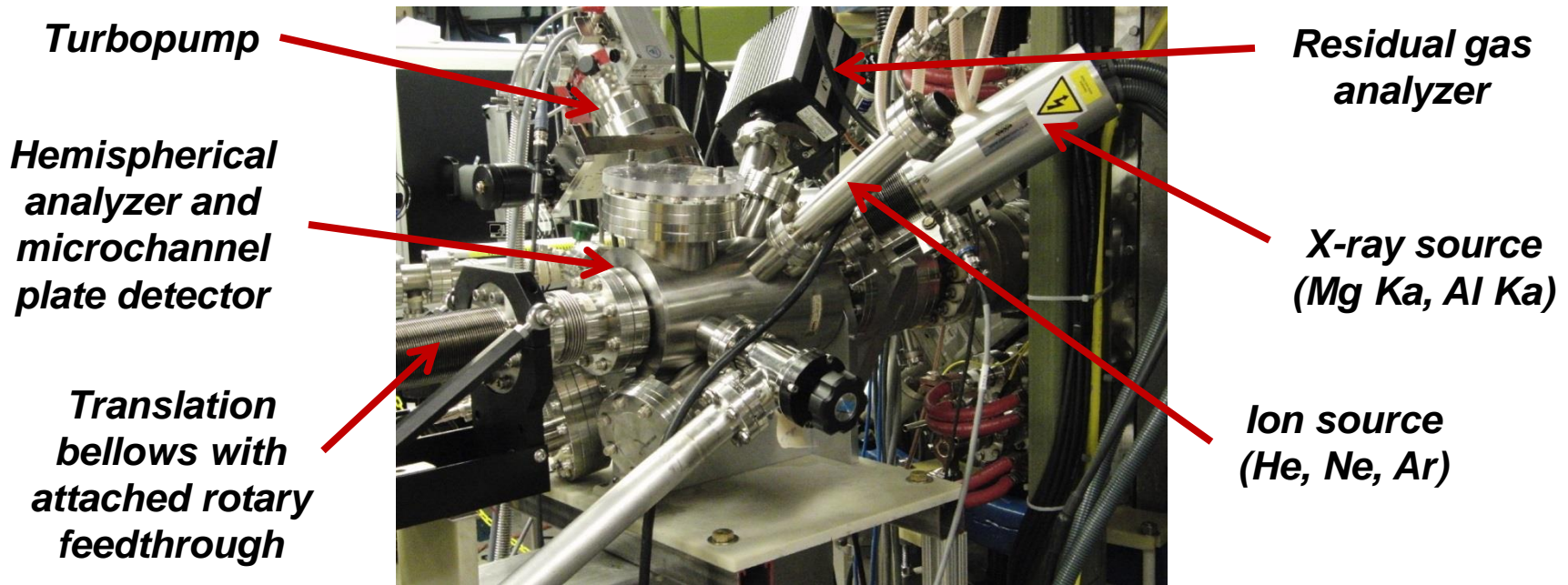
- 11:40 – 12:30 •Open prioritization and run-time allocation discussion for M&P TSG (~1 hour)

As a courtesy to your fellow speakers, please try to stay on time. I will be moderating the time as best I can.

FY2016 milestone R16-2 needs baseline data before high-Z upgrade

- Tile installation between FY15 and FY16 runs to support FY16 milestone
 - Having machine shops evaluate differences in cost for W vs. Mo
 - Targeting row-2 of NSTX-U with minimal divertor height changes
- Development of reference, high-Z discharge proposed at previous meeting alongside reference parameter scans
 - Only opportunity to get baseline data before upgrade this coming outage
- Reference shape will also provide closer strike-point to MAPP location for material transport and evolution studies

Materials Analysis and Particle Probe – enabling more than “waving dead chickens”



| Analysis Technique | Fundamental Information | Status on LTX |
|--|--|----------------|
| X-ray photoelectron spec. (XPS) | Elemental/chemical state analysis | Operational |
| Thermal desorption spec. (TDS)* | Binding E of surface volatiles | Operational |
| Low-E ion scattering spec. (LEISS) Direct Recoil Spectroscopy (DRS) | Impurities with LEISS and H with DRS in forward scattering geometry | In development |

More information from J.P. Allain later

Comment on schedule and logistics concerning MAPP

- Target for “ready for commissioning” **mid-May**
 - Mechanical installation procedure (IP) completed
 - Drawings for electrical IP in progress
 - Computer control check scheduled April with UIUC support
- MAPP will require expert operator to obtain data
 - **Cannot think of this as archived RGA data (for example)**
 - Complex diagnostic, like many others, and requires expert to sift through potential instrumental effects and other issues before providing interpretable data
 - Requires commitment from trained operator to be present for any XPs

The rest of this session

- Speakers are given 8 minutes total with a recommendation of 5 minutes of slides, 3 for discussion
 - Time is set aside at the end of the session for prioritization and allocation discussion – keep discussion to XP scientific review
 - E.g. NSF review criteria: What is potential for proposal to advance knowledge and understanding within the field?
 - Does the proposal explore novel and/or transformative concepts?
 - Is the plan well-reasoned and based on sound rationale?
 - Are there adequate resources to carry out the proposed activities?
- Please state clearly your needs
 - Discharge shape (e.g. high-Z reference discharge shape, high-delta fiducial)
 - Boron only, Lithium only, both
 - Is MAPP requested and your operator