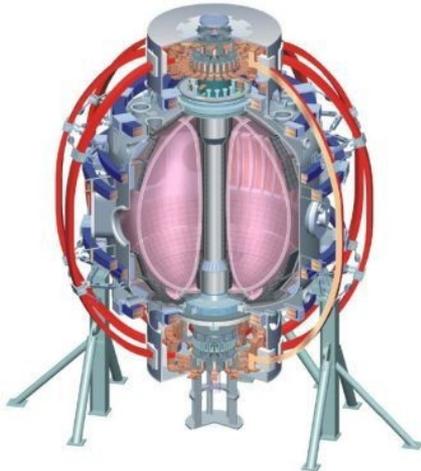


Lithium Research Topical Science Group Research Priorities and Agenda

C. Skinner (Leader)
M.A. Jaworski (Deputy)
D. Stotler (Theory)
R. Kaita (Former Deputy)
PPPL

NSTX 2011 Research Forum Plenary Session
LSB-318 – 1:30-5:30pm, March 15, 2011



*Culham Sci Ctr
U St. Andrews*

York U

Chubu U

Fukui U

Hiroshima U

Hyogo U

Kyoto U

Kyushu U

Kyushu Tokai U

NIFS

Niigata U

U Tokyo

JAEA

Hebrew U

Ioffe Inst

RRC Kurchatov Inst

TRINITY

KBSI

KAIST

POSTECH

ASIPP

ENEA, Frascati

CEA, Cadarache

IPP, Jülich

IPP, Garching

ASCR, Czech Rep

U Quebec

College W&M
Colorado Sch Mines
Columbia U
CompX
General Atomics
INEL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Nova Photonics
New York U
Old Dominion U
ORNL
PPPL
PSI
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Washington
U Wisconsin

(R12-1) Investigate the relationship between lithium-conditioned surface composition and plasma behavior

- Utilize MAPP diagnostic to characterize lithiated surface conditions, e.g. reactions between evaporated lithium and residual gases as well as the plasma facing material itself
 - NSTX discharges and background vacuum are dynamic environments, MAPP will aid in understanding the surface conditions before and after plasma discharges
- Compare the effect of different surface conditions on plasma performance metrics, such as stored energy, confinement time, fueling efficiency, D pumping, recycling and impurities, and/or local parameters (e.g. local Ne, Te, Ti)
 - NSTX brings together diverse tools and diagnostics to explore the plasma response to changing wall conditions
- Assess impact of lithiated, molybdenum inboard and outboard PFCs on plasma performance
 - The Mo-tile upgrade expands the amount of lithiated refractory PFCs beyond the FY10 LLD installation – NSTX is the only high-power, diverted tokamak examining lithiated refractory metals in the world
- Assess impact of novel Li delivery systems on plasma parameters such as stored energy, confinement time, fueling efficiency, impurities and/or local plasma parameters
 - NSTX has multiple methods for applying lithium to PFCs, both before and during a plasma discharge

LRTSG session agenda (Wednesday, 1:30-5:30pm, LSB-252)

- 1:30-1:50pm – Session opening (MA Jaworski, chair)
 - 1:35 – C. Taylor (Purdue): MAPP introduction and status
- 1:50-2:20pm – Initiation of plasma operations
 - 1:50 – R. Maingi (ORNL)
 - 2:00 – H. Kugel (PPPL)
 - 2:10 – M.A. Jaworski (PPPL)
- 2:20-3:10pm – MAPP related XPs
 - 2:20 – C. Skinner (H. Kugel presenting)
 - 2:30 – M.A. Jaworski (PPPL) (4 XPs)
 - 3:00 – D. Stotler (PPPL)
- 3:10-3:20pm – Break
- 3:20pm-4:30 – Non-MAPP related XPs
 - 3:20 – V. Soukhanovskii (LLNL)
 - 3:30 – F. Scotti (PPPL)
 - 3:40 – D. Mansfield (PPPL) (3 XPs)
 - 4:00 – T.K. Gray (ORNL)
 - 4:10 – L. Zakharov (PPPL)
- 4:20-4:30pm - Break
- 4:30-5:30pm – XP Prioritization (R. Kaita, chair)

Run-time request and guidance

- Significant number of XPs aiming to utilize MAPP to tackle the Milestone
- **Guidance provided to TSG leaders provides 10.5 days for LRTSG, split between FY11 and FY12**
- **Some non-LRTSG time, such as Mo-tile characterization, also indicated in run-time guidance**
- At present, need to expect all the run-time will come from LRTSG time until details of non-TSG time sorted out
- **TSG is over-subscribed by a factor of ~2, may ask XP authors to whittle down time requests below present minimum**

FY11 LRTSG subscription rate

	Request	Minimum	Guidance
No. XPs and XMPs:	17		
MAPP XPs of total:	8		
Total run days requested:	20	14.25	10.5
FY 11 request:	11.5	9.5	4
FY 12 request:	8.5	4.75	6.5
Non-LRTSG run time (Mo-tile)	3.5		2
Non-LRTSG run time (Li-introduction and/or boron)	3.5		2