

Program for the 2nd International Symposium on Lithium Applications for Fusion Devices

April 27-29, 2011

**Princeton Plasma Physics Laboratory
Princeton, NJ, USA**

April 27, 2011:

8:20 Registration at PPPL

8:40 Welcome, S. Prager, Director, PPPL

8:45 Announcement: Local organizer

Session I-A. Lithium in Magnetic Confinement Experiments Overview Talks: [8:50 – 10:20] [Chair: Y. Hirooka]

8:50 – 9:20 H. W. Kugel: NSTX Plasma Performance with a Liquid Lithium Divertor

9:20 – 9:50 J.S. Hu: New progresses of lithium coating or plasma facing material in ASIPP

9:50 – 10:20 R. Majeski: Recent Results from the Lithium Tokamak eXperiment (LTX)

10:20 – 10:35 Coffee Break

Session I-B. Lithium in Magnetic Confinement Experiments Overview Talks: [10:35 – 12:35] [Chair: M. Ono]

10:35 – 11:05 S.V. Mirnov: Li collection experiments on T-11M and T-10 in framework of Li closed loop concept

11:05 – 11:35 G. Mazzitelli: Plasma behavior in presence of a liquid lithium limiter

11:35 – 12:05 F.L. Tabaès: Recycling and Sputtering Studies in Hydrogen and Helium Plasmas under Lithiated Walls in TJ-II

12:05 – 12:35 P. Innocente: Lithization on RFX-mod reversed field pinch experiment

12:35 – 1:30 Lunch

Session II-A. Lithium in Magnetic Confinement Topical Experiments: [1:30 – 3:20] [Chair: G. Mazzitelli]

- 1:30 – 1:50 V. A. Soukhanovskii: Recycling, Pumping and Divertor Plasma-Material Interactions with evaporated lithium coatings in NSTX
- 1:50 – 2:10 M. A. Jaworski: Modification of the Electron Energy Distribution Function during Lithium Experiments on the National Spherical Torus Experiment
- 2:10 – 2:25 J. Kallman: Determination of Effective Sheath Heat Transmission Coefficient in NSTX Discharges with Applied Lithium Coatings
- 2:25 – 2:45 A.G. McLean: Liquid Lithium Divertor surface temperature dynamics and edge plasma modification under plasma-induced heating and lithium pre-heating
- 2:45 – 3:05 R. Nygren: Thermal Modeling of the Surface Temperatures on the Liquid Lithium Divertor in NSTX
- 3:05 – 3:20 F. Scotti: Surface reflectivity and carbon source studies with the Liquid Lithium Divertor in NSTX

3:20 – 3:40 Coffee Break

Session II-B. Lithium in Magnetic Confinement Topical Experiments: [3:40 – 5:30] [Chair: S. Mirnov]

- 3:40 – 4:00 R. Maingi: Effect of Lithium Coatings on Edge Plasma Profiles, Transport, and ELM Stability in NSTX
- 4:00 – 4:20 V. Surla: Characterization of transient particle loads during lithium experiments on the National Spherical Torus Experiment
- 4:20 – 4:40 D. Frigione: High Density and Pellet Injection Experiments with Lithium Coated Wall on FTU Tokamak
- 4:40 – 5:00 A. V. Vertkov: Status and prospect for the development of Liquid Lithium Limiters for Stellarator TJ-II
- 5:00 – 5:15 E. Granstedt : Effect of Lithium Wall Conditioning and Impurities in LTX
- 5:15 – 5:30 D.P. Lundberg : Fueling of LTX Plasmas with Lithium Plasma Facing Components
- POSTER PRESENTATION: C.H. Skinner: Plasma facing surface composition during Li evaporation on NSTX and LTX

April 28, 2011:

Session III-A. Special Liquid Lithium Technology Session: [8:30 – 10:20] [Chair: F.L. Tabarès]

- 8:30 – 9:00 M. Abdou: Summary of current R&D efforts for liquid metal based blankets and ITER TBM
- 9:00 – 9:30 M. Kondo: Improvement of compatibility of liquid metals Li and Pb-17LI
- 9:30 – 10:00 Y. Hirooka: Cluster/Aerosol Formation and Hydrogen Co-deposition by Colliding Ablation Plasma Plumes of Lithium and Lead
- 10:00 – 10:20 M. Kondo: Hydrogen transports at interface between gas bubbling and liquid breeders

10:20 – 10:40 Coffee Break

Session III-B. Special Liquid Lithium Technology Session: [10:40 – 12:20] [Chair: C. Skinner]

- 10:40 – 11:10 F. Groeschel : The IFMIF Target Facility engineering design and the validation of key issues within the IFMIF-EVEDA Project
- 11:10 – 11:30 G.Miccichè: Status of the activities for the development of the remote handling techniques for the maintenance of IFMIF target assembly system
- 11:30 – 11:50 D. Bernardi: IFMIF Lithium Target
- 11:50 – 12:20 I. Lyublinski: Module of Lithium Divertor for KTM Tokamak

12:20 – 1:20 Lunch

Session IV. Lithium Laboratory Test Stands:[1:20 – 3:05] [Chair: R. Kaita]

- 1:20 – 1:45 J.P. Allain: Lithium-based surfaces controlling Fusion plasma behavior at the plasma-material interface
- 1:45 – 2:00 C.N. Taylor: Deciphering energetic deuterium ion interactions with lithiated ATJ graphite
- 2:00 – 2:15 T. Abrams: Investigation of LLD Test Sample Performance Under High Heat Loads
- 2:15 – 2:35 V.Yu. Sergeev: Lithium technologies for edge plasma control

2:35 – 2:50 A.B. Martín: Electrical characteristics of lithium surfaces exposed to a plasma

2:50 – 3:05 B. Rais: Lithium particle detector for fusion applications.

POSTER PRESENTATION: S. Jung: Laboratory Investigation of an Effect of Lithium on ICRF Antenna in DEVeX

POSTER PRESENTATION: N.R. Murray: Capillary Wicking of Lithium on Laser-Textured Surfaces

3:05 – 3:20 Coffee Break

V. Lithium Theory / Modeling / Comments [3:20 – 5:30] [Chair: J. Menard]

3:20 – 3:45 P. S. Krstic : Dynamics of deuterium retention and sputtering of Li-C-O surfaces

3:45 – 4:05 J.N. Brooks : Modeling of plasma/lithium-surface interactions in NSTX: status and key issues”

4:05 – 4:25 M Romanelli: Turbulent Transport in Lithium Doped Fusion Plasmas

4:25 – 4:50 C.S. Chang: Kinetic simulation of Lithium transport and its effect on diverted NSTX plasma*

4:50 – 5:10 R.D. Smirnov: Modeling of lithium dust injection and wall conditioning effects on edge plasmas with DUSTT/UEDGE code

5:10– 5:30 M. Ono: Opportunities and Challenges of Lithium Applications for Magnetic Fusion Research

Symposium Banquet (7:00 – 10:00 pm)

April 29, 2011:

VI. Innovative Lithium Applications: [8:30 – 10:45] [Chair: H. Kugel]

- 8:30 – 8:50 I. Tazhibayeva: Study of Processes of Hydrogen Isotope Interaction with Lithium CPS
- 8:50 – 9:15 D. Ruzic: Lithium / Molybdenum Infused Trenches (LiMIT): A heat removal concept for the NSTX inner divertor
- 9:15 – 9:35 L. E. Zakharov: Design guidance for the flowing lithium systems in tokamaks
- 9:35 – 9:55 A. Sternlieb : Making turn toward fusion development
- 9:55 – 10:15 D. K. Mansfield: Pacing Small ELMs at High Frequency using Spherical Lithium Granules and a Dropper / Impeller Injection Technology
- 10:15 – 10:35 D. Andruczyk: Electrostatic Lithium Injector (ELI)
- 10:35 – 10:50 Y.M. Goh: Concept Development and Engineering Considerations of a Steady-State Lithium-Coated Divertor

10:50 – 11:10 Coffee Break

VII. Panel Discussions: Is lithium PFC viable in magnetic fusion reactors such as ITER? [11:10 – 12:30]

12:30 – 1:30 Lunch

VIII. Poster Session: [1:30 – 3:30] at the PPPL LSB Lobby

IX. Concluding Session: [3:30 – 4:30]