

**The 2nd NIFS-CRC International Symposium on Plasma-Surface Interactions**  
**Jan. 18<sup>th</sup>-20<sup>th</sup>, 2010**  
**National Institute for Fusion Science, Toki, Gifu, Japan**  
**Admin. Bldg. Conf. Room (401)**

**Symposium Program**

**Jan. 17<sup>th</sup>**

18:00 – 20:00    Get-together Beer at Ohstat Hotel

**Jan. 18<sup>th</sup>**

9:00                Registration at NIFS

9:30-9:40        Komori, A., Director of General  
Sato, M., Coordinated Research Center Director  
*Opening remarks*

**Session-1: Li application to boundary control-I (Chair: Y. Hirooka)**

9:40-10:20        Kugel, H. W.  
*Lithium Coatings on NSTX Plasma Facing Components and Its Effects  
On Plasma Performance*

10:20-10:40       Mansfield, D. K.  
*A Simple Apparatus for the Injection of Lithium Aerosol into the  
Scrape-off Layer of Fusion Research Devices*

10:40-11:10       Canik, J. M.  
*Effects of lithium coatings on ELM stability in NSTX*

11:10-11:30       Skinner, C. H.  
*Deuterium retention with lithium conditioned walls in NSTX*

11:30-12:10       Kaita, R.  
*Experiments with Liquid Metal Walls: First Results from the Lithium  
Tokamak Experiment*

12:10-12:30       Hu, J. S.  
*Liquid lithium Limiter and coating experiments in HT-7*

12:30 – 13:30    Lunch

**Session-2: Li application to boundary control-II (Chair: M. Ono)**

13:30-14:10       Ohyabu, N.  
*Super Dense Core Plasma due to Internal Diffusion Barrier in LHD*

- 14:10-14:50 Hirooka, Y.  
*A review of the boundary control effects on core plasma confinement and its implications to future steady-state magnetic fusion experiments*
- 14:50-15:10 Tsuchiya, H.  
*Development of lithium vapor injectors for the boundary control*
- 15:10-15:30 Ashikawa, N.  
*Surface chemical/binding reaction of coated Li layer by lithium vapor injectors in LIGHT-1*
- 15:30 – 15:40 Coffee

**Session-3: Li application to boundary control-III (Chair: F. L. Tabarés)**

- 15:40-16:00 Chung, K. S.  
*Distribution of lithium neutrals and ions in hydrogen and helium background*
- 16:00-16:20 Tokitani, M.  
*Micro/nano scale modification and particle retention in tungsten exposed to divertor plasmas in LHD*
- 16:20-16:50 Masuzaki, S.  
*Design and installation of the closed helical divertor in LHD*
- 16:50-17:30 Shoji, M.  
*Functions of intrinsic magnetic field line structures on lithium ion transport in the LHD plasma periphery*
- 17:30-17:50 Sunahara, A  
*Atomic number Z dependence on dynamics of laser-ablated materials*
- 18:00 Bus leaves for non-host BBQ dinner at Kohyoen

**Jan. 19th**

**Session-4: Plasma-surface interactions in steady state devices (Chair: B.J. Lee)**

- 9:30-10:10 Kwon, M.  
*KSTAR Experimental Activities Focused on the Plasma-Wall Interaction*
- 10:10-10:40 Hong, S.H.  
*First Boronization in KSTAR (Characterization of a-C:B:H thin film deposited by using carborane vapor)*
- 10:40-11:00 Kang, B. H.  
*Development of the neutron flux monitor in KSTAR using stilbene scintillator*
- 11:00 – 11:10 Coffee

**Session-5: Li application to boundary control-IV (Chair: G. Mazzitelli)**

- 11:10-11:50 Tabarés, F. L.  
*Overview of TJ-II performance under Lithiated Wall Conditions*
- 11:50-12:20 Taffala, D.  
*Wall conditioning strategies in the stellarator TJ-II*
- 12:20 – 13:30 Lunch

**Session-6: Li application to boundary control-V (Chair: S. Mirnov)**

- 13:30-14:10 Mazzitelli, G.  
*Review of FTU results with the liquid lithium limiter*
- 14:10-14:40 Tudisco, O.  
*Peaked Density Profiles and MHD activity on FTU in lithium dominated discharges*
- 14:40-15:10 Murakami, I.  
*Atomic and molecular processes with Lithium in peripheral plasmas*
- 15:10-15:30 Kato, D.  
*Linear polarization of photon emissions from reflected neutrals of atomic hydrogen at metal PFCs*
- 15:30 – 15:40 Coffee

**Session-7: Plasma devices for PSI research (Chair: M. Kwon)**

- 15:40-16:10 Nakashima, Y.  
*Research plan for divertor simulation making use of a large tandem mirror device*
- 16:10-16:30 Higashizono, Y.  
*Neutral transport analysis near plasma facing material in the compact PWI simulator APSEDAS*
- 16:30-16:50 Kado, S.  
*Application of the Tunable Lyot Filter Spectra Camera to Helium Line Emissions in MAP-II Linear Divertor Simulator (II)*
- 16:50-17:10 Sakaue, H. A.  
*EUV spectroscopy of highly charged iron ions in electron beam ion trap and large helical device*
- 17:10 -17:30 Na, S.-C.  
*Charge capture process in weak turbulent plasmas*
- 18:00 Bus leaves for the Banquet at Ryozan

**Jan. 20**

**Session-8: Li application to boundary control-VI (Chair: D. Mansfield)**

- 9:30-10:10 Ono, M.  
*Possible Implications of NSTX Lithium Experimental Results on Magnetic Fusion Research*
- 10:10-10:40 Nagayama, Y.  
*Liquid Lithium Divertor System for Fusion Reactor*
- 10:40-11:00 Zakharov, L. E.  
*Li Wall Fusion - new concept of magnetic fusion*
- 11:00 -11:10 Coffee

**Session-9: Li application to boundary control-VII (Chair: Y. Nagayama)**

- 11:10-11:50 Mirnov, S. V.  
*Experiments at the T-11M device in support of the tokamak concept with closed Li cycle*
- 11:50-12:20 Lyublinski, I. E.  
*Experience and technical issues of liquid lithium application as PFM in tokamaks*
- 12:20 -13:30 Lunch

**Session-10: A&M and PSI diagnostics (Chair: I. Murakami)**

- 13:30-13:50 Humbert, D.  
*New Web Interface to the IAEA ALADDIN Database for Particle Surface Interactions*
- 13:50-14:10 Lho, T.  
*Small experiment on interaction between plasma and molten salt with ECR low temperature plasma source.*
- 14:10-14:30 Sharma, S. K.  
*Measurement of hydrogen permeation due to the atomic flux using permeation probe in the spherical tokamak QUEST*
- 14:30-14:50 Woo, H.-J.  
*Measurement of Flow Velocity by Mach Probe and Laser-Induced Fluorescence in the Un-magnetized Ar Plasma*
- 14:50-15:00 Coffee

**Session-11: Summary and future outlook on Li-applications (Chair: Y. Hirooka)**

15:00-16:00      Program committee members' summary presentations

16:00             Hirooka, Y.  
*Closing Remark*

16:00-17:00      LHD tour

17:30             Bus leaves for Oustat Hotel