

**Schedule of the 11<sup>th</sup> China-Japan Symposium on  
Materials for Advanced Energy Systems and Fission & Fusion Engineering**

<b>Tuesday, September 11, 2012</b>		
<b>Session 1: Opening of CJS-11</b>		
8:30-8:50	Welcoming address:	1. Shuming Peng, <b>CAEP, China</b> 2. Takeo Muroga, <b>NIFS, Japan</b>
<b>Session 2: Keynotes (Chairpersons: A. Sagara, Shuming Peng )</b>		
8:50-9:15	K01	2-1 Design and R&D of heavy liquid metal cooled reactor in China Yican Wu (Institute of Nuclear Energy Safety Technology, CAS)
9:15-9:40	K02	2-2 Nuclear structural materials innovation——Radiation tolerance Akihiko Kimura (Kyoto University, Kyoto)
9:40-10:05	K03	2-3 New progress on R&D of Chinese solid breeder TBM Kaiming Feng (Southwestern Institute of Physics, Chengdu)
10:05-10:35	<b>Coffee Break&amp;Photography of group photo</b>	
10:35-11:00	K04	2-4 Overview of fusion related tritium research activities in Japan Kenji Okuno (Shizuoka University, Shizuoka)
11:00-11:25	K05	2-5 Preliminary considerations of D-T fuel recycling for CFETR Heyi Wang (Institute of Nuclear Physics and Chemistry, CAEP)
11:25-11:50	K06	2-6 Characterization of fusion structural materials in NIFS under the Japan-China collaboration programs TakeoMuroga (National Institute for Fusion Science, Toki)
11:50-13:30	<b>Lunch</b>	

<b>Tuesday, September 11, 2012</b>			
<b>Session 3: Blanket Technology 1 (ROOM 1) (Chairpersons: S. Fukada, Heyi Wang)</b>			
13:30-13:55	K07	3-1	Tritium migration and release behaviors for neutron irradiated lithium-enriched $\text{Li}_2\text{TiO}_3$ . Yasuhisa Oya (Shizuoka University, Shizuoka)
13:55-14:20	K08	3-2	Tritium release on $\text{Li}_4\text{SiO}_4$ pebbles from TRINPC-I experiments Chunmei Kang (Institute of Nuclear Physics and Chemistry, CAEP)
14:20-14:40	O01	3-3	Tritium release kinetics of lithium orthosilicate pebble irradiated with low thermal-neutronfluence Chengjian Xiao (Institute of Nuclear Physics and Chemistry, CAEP)
14:40-15:00	O02	3-4	Experimental investigation of thermal conductivity of the $\text{Li}_4\text{SiO}_4$ pebble beds YongjinFeng (Southwestern Institute of Physics, Chengdu)
15:00-15:20	O03	3-5	Characterization of lithium orthosilicate ceramic pebble produced from lithium hydroxide Xiaoling Gao (Institute of Nuclear Physics and Chemistry, CAEP)
15:20-15:35	<b>Coffee Break</b>		
<b>Session 4: Blanket Technology 2 (ROOM 1) (Chairpersons: K. Okuno, Kaiming Feng)</b>			
15:35-16:00	K09	4-1	Development of CLAM steel and liquid breeder TBM Qunyin Huang (Institute of Nuclear Energy Safety Technology, CAS)
16:00-16:25	K10	4-2	Chemical activity of hydrogen isotopes in Pb-Li eutectic alloy blanket Satoshi Fukada (Kyushu University, Fukuoka)
16:25-16:50	K11	4-3	Hydrogen extraction from liquid lithium-lead alloy by gas-liquid exchange method Bo Xie (Institute of Nuclear Physics and Chemistry, CAEP)
16:50-17:10	O04	4-4	Fabrication techniques development of liquid breeder TBM in China Chunjing Li (Institute of Nuclear Energy Safety Technology, CAS)
17:10-17:30	O05	4-5	Study on hydrogen isotopes permeation under lithium-lead thermal convection Makoto Okada (Kyushu University, Fukuoka)
Adjourn			
Transfer to banquet hall			
<b>Session 5: Fission Materials &amp; Fuels 1 (ROOM 2) (Chairpersons: A. Kimura, Yican Wu)</b>			
13:30-13:55	K12	5-1	Effective transmutation of high level radioactive waste in fast reactor by using hydride targets Michio Yamawaki (Research Institute of Nuclear Engineering, Uni. of Fukui)
13:55-14:20	K13	5-2	Design, construction and experiment of heavy liquid metal loops for advanced nuclear reactors in China Sheng Gao (Institute of Nuclear Energy Safety Technology, CAS)
14:20-14:40	O06	5-3	The study on fabrication and performance detection of U-Mo-Al plate-type dispersion fuel element for fission research reactor Jiangang Chen (National key laboratory of reactor fuel and materials, NPIC)
14:40-15:00	O07	5-4	Influence of microstructure of Sc film on the deuterium absorption capacity Qingying Wu (Institute of Nuclear Physics and Chemistry, CAEP)
15:00-15:20	O08	5-5	Influence of mesh specification and flow velocity on purification efficiency of cold trap in lead-bismuth alloy Jingyao Xu (Institute of Nuclear Energy Safety Technology, CAS)
15:20-15:35	<b>Coffee Break</b>		
<b>Session 6: Fission Materials &amp; Fuels 2 (ROOM 2) (Chairpersons: T. Muroga, Lei Peng)</b>			
15:35-16:00	K14	6-1	Oxygen control system for the melt of lead-bismuth eutectic alloy Hailong Chang (Institute of Modern Physics, CAS)
16:00-16:25	K15	6-2	Effects of stress on radiation induced hardening of Fe-Mn model alloys Hideo. Watanabe (Kyushu University, Fukuoka)
16:25-16:45	O09	6-3	Corrosion behaviors of B4C-Al composite materials in PWR spent fuel pools Jianmin Shi (Institute of Nuclear Physics and Chemistry, CAEP)
16:45-17:05	O10	6-4	Polyvinyl alcohol functionalized with vinylphosphonic acid for sorption of uranium (VI) ions in aqueous solutions Fangting Chi (Institute of Nuclear Physics and Chemistry, CAEP)
17:05-17:25	O11	6-5	Studies on ion exchange behavior of cesium into zirconium molybdopyrophosphate and its application as precursor of cesium ion sieve Kai Lu (Institute of Nuclear Physics and Chemistry, CAEP)
Adjourn			
Transfer to banquet hall			

<b>Wednesday, September 12, 2012</b>		
<b>Session 7: First Wall Technology 1 (ROOM 1) (Chairpersons: Y. Oya, Guanghong Lu )</b>		
9:00-9:25	K16	7-1 Desorption kinetics of hydrogen isotopes Implanted by glow discharge Masao Matsuyama (University of Toyama, Toyama)
9:25-9:50	K17	7-2 R&Ds on ITER enhanced heat flux first wall in China Jiming Chen (Southwestern Institute of Physics, Chengdu)
9:50-10:15	K18	7-3 Tritium transport in neutron-irradiated tungsten Yuji Hatano (University of Toyama, Toyama)
10:15-10:35	O12	7-4 Preparation and characterization of high performance ODS ferritic steel Xianping Wang (Institute of Solid State Physics, CAS)
10:35-10:45	<b>Coffee Break</b>	
<b>Session 8: First Wall Technology 2 (ROOM 1) (Chairpersons: Y. Hatano, Changsong Liu)</b>		
10:45-11:10	K19	8-1 Reduction of in-vessel tritium inventory using glow discharge conditionings T. Hino (Hokkaido University, Sapporo)
11:10-11:35	K20	8-2 Progress of W/Cu divertor project for EAST Guangnan Luo (Institute of Plasma Physics, CAS)
11:35-12:00	K21	8-3 Effect of carbon on hydrogen behavior in tungsten Yuexia Wang (Institute of Modern Physics, Fudan University)
12:00-12:20	O13	8-4 Preparation and characterization of high performance tungsten Qianfeng Fang(Institute of Solid State Physics, CAS)
12:20-13:30	<b>Lunch</b>	
<b>Session 9: First Wall Technology 3 (ROOM 1) (Chairpersons: T. Hino, Guangnan Luo)</b>		
13:30-13:55	K22	9-1 Deuterium retention in tungsten deposits by deuterium ion exposure Kazunari Katayama (Kyushu University, Fukuoka)
13:55-14:15	O14	9-2 Sensitivity calibration method and application of a high-sensitivity thermal desorption spectroscopy system to investigate the behavior of hydrogen isotopes and helium in fusion reactor materials Tirui Xia (China Institute of Atomic Energy)
14:15-14:35	O15	9-3 Deuterium behavior in vacuum plasma spray W coating Teo Nozaki (University of Toyama, Toyama)
14:35-14:55	O16	9-4 Cavity swelling in ferritic/martensitic steels irradiated with energetic ions Tielong Shen (Institute of Modern Physics, CAS)
14:55-15:15	O17	9-5 Deuterium Absorption Behaviors of Ti-Zr-Ni(-Pd) quasi crystals with prospect in ITER HuogenHuang (China Academy of Engineering Physics)
15:25-15:35	<b>Coffee Break</b>	
<b>Session 10: Hydrogen in materials (ROOM 1) (Chairpersons: M. Matsuyama, Qunyin Huang )</b>		
15:35-16:00	K23	10-1 Nucleation mechanism of H and He bubble Changsong Liu (Institute of Solid State Physics, CAS)
16:00-16:25	K24	10-2 Progress of irradiation experiments on CLAM steel Lei Peng(Institute of Nuclear Energy Safety Technology, CAS)
16:25-16:45	O18	10-3 Permeation of hydrogen and deuterium through CLAM steel Xiaoqiang Chen (Institute of Nuclear Energy Safety Technology, CAS)
16:45-17:05	O19	10-4 Determination of distribution coefficient of hydrogen isotopes between Y and Li Satoshi Shigebaru (Kyushu University, Fukuoka)
17:05-17:25	O20	10-5 Improvement in hydriding property of LaNi <sub>4.8</sub> Al <sub>0.2</sub> alloy encapsulated by SiO <sub>2</sub> sol Xiaojing Qian (China Academy of Engineering Physics)
17:25-17:45	O21	10-6 Thermal properties of zirconium deuteride Hongbo Yan (Institute of Nuclear Physics and Chemistry, CAEP)
17:45-18:05	O22	10-7 Preparation of alveolate hydrophobic catalyst for tritium waste gas treatment Yong Yang (Institute of Nuclear Physics and Chemistry, CAEP)
Adjourn		

<b>Wednesday, September 12, 2012</b>		
<b>Session 11: Fission Materials &amp; Fuels 3 (ROOM 2) (Chairpersons: H. Watanabe, Yican Wu)</b>		
9:00-9:25	K25	11-1 Measurements and analyses of uranium reaction rates on depleted uranium/polyethylene shells Xiaosong Yan (Institute of Nuclear Physics and Chemistry, CAEP)
9:25-9:50	K26	11-2 Initiation of SCC in nickel-base weld metals in PWR primary water Ru Xiong (National Key Laboratory of Reactor Fuel and Materials, NPIC)
9:50-10:10	O23	11-3 Isotherm, thermodynamic and kinetic studies of Sr <sup>2+</sup> ion-exchange onto hexagonal tungsten oxide Bijun Liu (Institute of Nuclear Physics and Chemistry, CAEP)
10:10-10:30	O24	11-4 Unique hydrogen embrittlement of titanium during heating Xiaoqi Ye (China Academy of Engineering Physics)
10:30-10:45	<b>Coffee Break</b>	
<b>Session 12: Fission Materials &amp; Fuels 4 (ROOM 2) (Chairpersons: M. Yamawaki, Farong Wan)</b>		
10:45-11:10	K27	12-1 The analysis of mechanical behavior for UMo/Al dispersion fuel during irradiation Xiao Liu (Institute of Nuclear Physics and Chemistry, CAEP)
11:10-11:30	O25	12-2 Measurements of the multiplication of several depleted uranium spherical shells Xuan Lian (Institute of Nuclear Physics and Chemistry, CAEP)
11:30-11:50	O26	12-3 Corrosion of CVD-SiC in high temperature water and steam Qiang Zhang (National key laboratory of reactor fuel and materials, NPIC)
11:50-12:10	O27	12-4 Feasibility study of a SiC sandwich neutron spectrometer Jian WU (Institute of Nuclear Physics and Chemistry, CAEP)
12:10-13:30	<b>Lunch</b>	
<b>Session 13: Fusion Materials 1 (ROOM 2) (Chairpersons: T. Kunugi, Yuexia Wang)</b>		
13:30-13:55	K28	13-1 The effect of tantalum on irradiation damage in ferritic steels Farong Wan (University of Science and Technology, Beijing)
13:55-14:20	K29	13-2 In-situ observation of radiation damage in iron base alloys by means of HVEM-ion accelerator Facility Somei. Ohnuki (Hokkaido University, Sapporo)
14:20-14:40	O28	13-3 Development of nano-particle dispersion strengthened vanadium alloys Pengfei Zheng (The Graduate University for Advanced Studies, Toki)
14:40-15:00	O29	13-4 Electron irradiation behaviors of pure vanadium and pure iron Boling Zhu (University of Science and Technology, Beijing)
15:00-15:20	O30	13-5 XPS study on surface oxidation of V-4Cr-4Ti alloy Yufei Li (China Academy of Engineering Physics)
15:20-15:35	<b>Coffee Break</b>	
<b>Session 14: Fusion Materials 2 (ROOM 2) (Chairpersons: S. Ohnuki, Chunjing Li)</b>		
15:35-16:00	K30	14-1 Overview of the research and developments of divertor materials and components at SWIP Xiang Liu (Southwestern Institute of Physics, Chengdu)
16:00-16:20	O31	14-2 Current status of RAFM steel development for fusion blanket application at SWIP Pinghuai Wang (Southwestern Institute of Physics, Chengdu)
16:20-16:40	O32	14-3 Study on the irradiation damage of lithium tantalate implanted with ions Lilong Pang (Institute of Modern Physics, CAS)
16:40-17:00	O33	14-4 The mechanism study of liquid metal induced micro-crack during arc brazing 316SS cooling pipe for ITER magnet supports Pengyuan Lee (Southwestern Institute of Physics, Chengdu)
17:00-17:20	O34	14-5 Defects evolution and hardening of tungsten induced by 200 keV He-ions at room temperature Minghuan Cui (Institute of Modern Physics, CAS)
17:20-17:40	O35	14-6 Aging effects on the mechanical properties of ODS steels Dongsheng Chen (Kyoto University)
Adjourn		

<b>Thursday, September 13, 2012</b>		
<b>Session 15: Reactor System &amp; Design (ROOM 1) (Chairpersons: T. Muroga, Jiming Chen)</b>		
9:00-9:25	K31	15-1 Design rounds on helical DEMO reactor FFHR-d1 Akio Sagara ( National Institute for Fusion Science, Toki)
9:25-9:50	K32	15-2 Conceptual design of China lead alloy based zero power reactor CLEAR-0 Chao Liu (Institute of Nuclear Energy Safety Technology, CAS)
9:50-10:10	O36	15-3 Conceptual design of fusion-fission hybrid multi-functional experimental reactor (FDS-MFX) Jieqiong Jiang (Institute of Nuclear Energy Safety Technology, CAS)
10:10-10:30	O37	15-4 Optimization design of plasma parameters for fusion-fission hybrid reactor based on GDT (FDS-GDT3) Dehong Chen (Institute of Nuclear Energy Safety Technology, CAS)
10:30-10:50	<b>Coffee Break</b>	
<b>Session 16:Simulation, Data Base &amp; Modeling (ROOM 2)( Chairpersons: K. Katayama, Sheng Hu)</b>		
9:00-9:25	K33	16-1 Modeling and simulation of hydrogen/helium behaviors in tungsten at different scales & plasma-irradiation-resistant materials design Guanghong Lu (Department of Physics, Beihang University)
9:25-9:50	K34	16-2 Current status of TITAN task 1-3“flow control and thermofluid modeling” Tomoaki Kunugi (Department of Nuclear Engineering, Kyoto University)
9:50-10:10	O38	16-3 Numerical simulation of 3-dimension tritium distribution in dual-cooled lead lithium blanket for FDS-II Muyi Ni (Institute of Nuclear Energy Safety Technology, CAS)
10:10-10:30	O39	16-4 Numerical simulation of two-phase tritium transport in liquid PbLi bubble column Min Li (Institute of Nuclear Energy Safety Technology, CAS)
10:30-10:50	<b>Coffee Break</b>	
<b>Session 17:Summary ( Gathering to one room )</b>		
10:50-11:10	Summary Report	
11:10-11:30	Closing Remarks	
	Lunch	
Afternoon	Group Discussion	