

Oral Presentation

Symposium 10. Materials Challenges in Nuclear Energy

February 20 (MON)

Time	Program	
	[Session 10-1] Materials Challenges in Nuclear Energy	
	Chair: Weon-Ju Kim (KAERI), Rongzheng Liu (Tsinghua University)	
15:10-15:40	[SO10-1] Current R&D Status on Nuclear Materials for Future Nuclear Systems in Korea (Keynote presentation)	WhungWhee Kim (Korea Atomic Energy Research Institute)
15:40-16:10	[SO10-2] High Performance SiC/SiC Products by DEMO-NITE Process and Their Responses under Severe Environments (invited speaker)	Akira Kohyama (Muran Institute of Technology)
16:10-16:40	[SO10-3] Silicon carbide materials: preparation, performance and nuclear applications (invited speaker)	Rongzheng Liu (Tsinghua University)
16:40-17:10	[SO10-4] A Study on the High Temperature Oxidation Behavior of SiC matrix under Hydrothermal Exposure for SiC-TRISO Nuclear Fuel (invited speaker)	SEUNG JAE LEE (KEPCONuclear Fuel)
17:10-17:40	[SO10-5] Hydrothermal Corrosion of SiC Ceramics: Effect of Microstructure and Water Chemistry (invited speaker)	Weon-Ju Kim (Korea Atomic Energy Research Institute)
17:40-17:55	[SO10-6] Thermal Shock Behavior of Multi-Layered SiC and SiCf/SiC Composite Tubes for LWR Fuel Cladding Applications	Daejong Kim (Korea Atomic Energy Research Institute)
17:55-18:10	[SO10-7] Ti3SiC2 interphase coating on SiC fiber by Electrophoretic deposition for SiCf/SiC composite	Hyeon-Geun Lee (Korea Atomic Energy Research Institute)

February 21 (TUE)

Time	Program	
	[Session 10-2] Materials Challenges in Nuclear Energy	
	Chair: Changheui Jang (KAIST), Junhyun Kwon (KAERI)	
09:00-09:30	[SO10-8] Modeling of radiation hardening and segregation in nuclear reactor internal materials (invited speaker)	Junhyun Kwon (Korea Atomic Energy Research Institute)
09:30-10:00	[SO10-9] Delocalized Plastic Flow in Proton-Irradiated Monolithic Metallic Glasses (invited speaker)	Dongchan Jang (KAIST)
10:00-10:30	[SO10-10] Effects of Various Coatings on Corrosion and Carburization Resistance of 316LN Stainless Steel in High Temperature S-CO ₂ Environment (invited speaker)	Changheui Jang (KAIST)
Time	Program	
	[Session 10-3] Materials Challenges in Nuclear Energy	
	Chair: Changheui Jang (KAIST), Junhyun Kwon (KAERI)	
10:50-11:05	[SO10-11] Development of Microporous gamma-Al ₂ O ₃ on Metallic Substrate for High Temperature Hydrogen Re-combiner Application	Changheui Jang (KAIST)
11:05-11:20	[SO10-12] OXIDATION BEHAVIOUR OF NANO OXIDE DISPERSION STRENGTHENED 18Cr FERRITIC STEELS	GOVINDAN SUNDARARAJAN (IIT Madras)
11:20-11:35	[SO10-13] Environmentally Assisted Cracking of Ni-Based Alloys Exposed to High Temperature Hydrogenated Water	Yun Soo Lim (Korea Atomic Energy Research Institute)
11:35-11:50	[SO10-14] TGA-QMS Water Vapor Measurements Of Zircaloy And Steel With A Water Vapor Furnace And A Modified SiC Furnace	Ekkehard Post (NETZSCH Geraetebau GmbH)
11:50-12:20	[SO10-15] Residual stress and creep behavior studies on nuclear materials using neutron diffraction	Wanchuck Woo (Korea Atomic Energy Research Institute)
Time	Program	
	[Session 10-4] Materials Challenges in Nuclear Energy	
	Chair: Hyun-Gil Kim (KAERI), Ekkehard Post (NETZSCH Geraetebau GmbH)	
15:50-16:20	[SO10-16] Development of Surface Modified-Zr Cladding for ATF (invited speaker)	Hyun-Gil Kim (Korea Atomic Energy Research Institute)
16:20-16:35	[SO10-17] A new model of hydrogen release from Zircaloy-4 oxidation	Joonyoung Sung (Handong Global University)
16:35-16:50	[SO10-18] Zirconium fire - a new challenge of nuclear spent fuel pool safety	Sanggil Park (ACT Co., Ltd.)
16:50-17:05	[SO10-19] Effect of air flow rate on Zircaloy-4 oxidation kinetics	Yunhwan Maeng (Handong Global University)
17:05-17:20	[SO10-20] Oxidation Behavior of Surface Treated Zircaloy-4 having Y ₂ O ₃ -Dispersed Layer	YANG-IL JUNG (Korea Atomic Energy Research Institute)