

The 2nd USTB-Tohoku U Joint Research Laboratory Workshop

November 20-21, 2017 Sendai, Japan

November 20, 2017 (Monday)

Part 1 Welcome

Time: 09:00-12:00AM

2017.11.17

Location	Main meeting room on the 2nd floor, NICHe
Chairs	Prof. Y. JIN and Prof. T. SHOJI
09:00-09:10	Opening Address by Prof. Tetsuo SHOJI, Co-director of OAS/NCMS Joint Laboratory by Prof. Ying JIN, Co-director of OAS/NCMS Joint Laboratory
09:10-09:20	Welcome Address by Prof. Sadayoshi ITO, Director of OAS and Executive Vice -President of Tohoku University
09:20-09:50	Plenary lecture by Prof. Dongbai SUN, Executive Vice President of SUN YAT-SEN UNIVERSITY
09:50-10:10	Group photo
10:10-10:40	Coffee Break
10:40-11:00	Short Introduction of the research groups of NCMS by Prof. Ying JIN, Co-director of OAS/NCMS Joint Laboratory
11:00-11:20	Short Introduction of the research groups of OAS by Prof. Tetsuo SHOJI, Co-director of OAS/NCMS Joint Laboratory
11:20-12:00	Plenary Lecture by Prof. Christofer Leygraf, KTH/USTB "Atmospheric Corrosion: Current Challenges in an Evolving Research Field"
12:00-12:45	Lunch at Open space on the 2nd floor, NICHe

November 20, 2017 (Monday)

Part 2 Workshop

Time:12:45-18:20,PM (25min/Talk including Q&A)

Location	Main meeting room, NICHe	Middle meeting room, NICHe
Session	Session I: HTHP/Nuclear materials (Chairs: Prof. Wenyue ZHENG, Associate Prof. N. K. DAS)	Session III: High Temperature Materials-A-USC/Boilers (Chairs: Prof. K. YOSHIMI, Dr. K. YAGI)
12:45-13:10	Prof. Yonghao LU, USTB "Characterization of Microstructure of Dissimilar Weld Joint (A508-III/82/182/316LSS) and its Corrosion Properties in High Temperature Water"	Dr. Koichi YAGI "Remaining life prediction of structural materials and components in high-temperature plants"
13:10-13:35	Associate Prof. Nishith K. Das "An atomic scale study on understanding of hydrogen accelerated oxidation"	Prof. Kyosuke YOSHIMI, Tohoku U "Microstructure, high-temperature deformability and oxidation resistance of a Ti5Si3-containing MoSiBTiC alloy"
13:35-14:00	Prof. Wenyue ZHENG, USTB "Materials Selection and Assessment for the Supercritical Water-cooled Reactors (SCWR)"	Fethi HAMDANI, Tohoku U, "Development of Heat-resistant Fe-based Alloys with High Creep Strength and Oxidation Resistance for A-USC at 700°C using Ultra-high Purity (UHP) Technology"
14:00-14:25	Assistant Prof. Jian XU, Tohoku U "Microstructure and pitting behavior of the dissimilar metal weld of 309L cladding and low alloy steel"	Dr. Hai CHANG, USTB "Lattice misfit and creep behavior of the Co-Al-W superalloy"
14:25-14:50	Dr. Tingguang LIU, USTB "Three-dimensional geometric characteristics of grains in conventional and grain boundary engineered 316L stainless steel"	Prof. Katsunari OIKAWA, Tohoku U "Microstructure evaluation of Superalloy 718 during heat mechanical treatment"
14:50-15:15	Senior Assistant Prof. Hiroshi ABE, Tohoku U "Low-temperature aging behavior of austenitic stainless steel welds"	Mr. Zihao WANG*, Assistant Prof. Jian XU, Associate Prof. Yoichi TAKEDA, Prof. Tetsuo SHOJI, Tohoku U "A novel electrochemical method for detection and quantification of laves phase in 12Cr martensitic stainless steel"
15:15-15:40	Coffee Break	Dr. Xiangyu ZHONG, Tohoku U "Characterizations of microstructure of 9Cr-1Mo steel weld joint after long-term service in a supercritical fossil power plant"
15:40-15:50	Coffee Break	
Session	Session VI: NDE/NDI (Non-destructive Evaluation/Inspection /Condition monitoring) (Chair: Prof. T. MIHARA)	Session II Corrosion of Advanced steel and Surface Science (Chairs: Prof. Y. JIN, Prof. I. MUTO)
15:50-16:15	Assistant Prof. Toshihiro TSUJI*, Associate Prof. Yoshikazu OHARA, Prof. Tsuyoshi MIHARA, Tohoku U "Development of gas-composite ultrasonic probe using diced piezoelectric element for air-coupled nondestructive inspection"	Prof. Ying JIN, USTB "A novel method for local electrochemical measurements"
16:15-16:40	Associate Prof. Yoshikazu OHARA*, Assistant Prof. Toshihiro TSUJI, Prof. Tsuyoshi MIHARA, Tohoku U "Development of Nonlinear Ultrasonic Phased Array for Closed Crack Imaging"	Prof. Izumi MUTO*, Prof. Yu SUGAWARA, Prof. Nobuyoshi HARA, Tohoku U "Real-Time Microelectrochemical Observations of Initiation and Very Early Stage of Corrosion on Steels"
16:40-17:05	Prof. Noritaka YUSA, Tohoku U "Development of electromagnetic nondestructive testing methods for assuring the integrity of structures"	Associate Prof. Tomohiko HOJO, Tohoku U "Effect of Strain Rate on Hydrogen Embrittlement of Ultra High-Strength TRIP-aided Bainitic Ferrite Steel"
Session	Session V (1) : Modeling and simulation Metallic and non metallic application (Chairs: Prof. M. KUBO, Dr. C. ZHANG)	
17:05-17:30	Prof. Emeritus Hirozo MIHASHI, Tohoku U "Development of Ductile Cement-based Composites with Hybrid Combination of Different Types of Fibers"	Prof. Lei WEN, USTB "Effect of Rare Earth Element on the Microstructure and Corrosion Behavior of Fe-Mn-Al-C TWIP Steel"
17:30-17:55	Dr. Meng GUO, USTB "Study on the scale correlation of interfacial interaction between asphalt binder and mineral aggregate"	Dr. Feifei HUANG, USTB "Application of Cyclic Thermal-oxidized IrOx Electrode in Corrosion detection and its Nafion Modification"
18:30-20:00	Banquet at Shikisai Restaurant in Aoba Memorial Hall *About 10 minutes walk from NICHe.	

Nov. 21, 2017 (Tuesday)

Workshop

Time:09:00-11:50, AM (25min/Talk including Q&A)

Location	Main meeting room, NICHe	Middle meeting room, NICHe
Session	Session V (2) Modeling and simulation Metallic and non metallic application (Chairs: Prof. M. KUBO, Dr. C. ZHANG)	Session IV: Hydrogen induced degradation (Chairs: Prof. E. AKIYAMA, Assistant Prof. J. XU)
9:00-9:25	Prof. Momoji KUBO, Tohoku U "Supercomputer Post-K Project "Challenge of Basic Science - Exploring Extremes through Multi-Physics and Multi-Scale Simulations"	Prof. Tetsuo SHOJI, Tohoku U "Hydrogen accelerated oxidation-fundamental and implication"
9:25-9:50	Dr. Chuanhui ZHANG, USTB "The Coadsorption Effect of Cl- and H2O on the Various Defect Al2O3 Film Surface"	Prof. Xuechong REN, USTB "Size Effect of Fatigue Properties of Axle Steel Used on High Speed Train"
9:50-10:15	Prof. Ying CHEN, Tohoku U "Full first-principles calculation of diffusivity of oxygen in ceramics materials"	Prof. Eiji AKIYAMA, Tohoku U "Hydrogen entry under rotational tribocorrosion test condition"
10:15-10:40	Assistant Prof. Jingxiang XU, Tohoku U "Large-scale Molecular Dynamics Study of the Water Vapor Effect on the Plastic Deformation of Polycrystalline Ni in Solid Oxide Fuel Cell"	Prof. Yutaka WATANABE, Tohoku U "Nondestructive and quantitative detection of pre-existing plastic strain in stainless steels by means of potentiostatic etching"
10:40-11:00	coffee Break	
11:00-11:25	Associate Prof. Nishith K. DAS, Tohoku U "Stability of vacancy-hydrogen clusters in nickel: A theoretical study"	Assistant Prof. Jian XU, Tohoku U "The effect of dissolved hydrogen on the electrochemical properties and oxide film of Alloy 182 in simulated primary water"
11:25-11:50	Ms. Qian CHEN, Tohoku U, "Molecular Dynamics Investigation on Plastic Deformation Mechanism of Iron Material in Supercritical Aqueous Environment"	
12:00-13:15	Lunch at Open space on the 2nd floor, NICHe	
13:15-	Free discussion and lab. Visit (Group Leaders' Initiative)	