INTERNATIONAL INSTITUTE FOR CARBON-NEUTRAL ENERGY RESEARCH

I²CNER THRUST WORKSHOP: TOWARD CARBON NEUTRALITY

ADVANCED ENERGY MATERIALS THRUST (AEM)
AND MULTISCALE SCIENCE AND ENGINEERING FOR ENERGY AND THE ENVIRONMENT THRUST (MS3E)

DATE: JANUARY 30TH, 2025, THURSDAY
TIME: 9:25AM – 6:00PM(JST)
VENUE: I²CNER HALLC, ITO CAMPUS, KYUSHU UNIVERSITY

Time	Speaker	Affiliation	Title
9:25 a.m	Masanobu Kubota	WPI-I²CNER, Kyushu University	Opening Remarks
Session 1: Advanced Energy Materials Thrust (AEM) ＊**HYBRID**			
9:30 a.m.	Petros Sofronis	University of Illionis at Urbana-Champaign, WPI- I²CNER	Powering the Future through Hydrogen Hubs and International Partnerships for Materials and Engineering System Solutions
10:30 a.m.	Mohsen Dadfarnia	University of Illionis at Urbana-Champaign, WPI- I²CNER	Mechanistic Model for Hydrogen Accelerated Fatigue Crack Growth in a Low Carbon Steel
10:55 a.m.	Vijayvargia Kshitij	University of Illionis at Urbana-Champaign, WPI- I²CNER	On the chemomechanics of bubble growth in hydrogen attack of plain carbon steels
11:20 a.m.	Shang Juan	WPI-I²CNER, Kyushu University	Enhanced hydrogen embrittlement of steel by the premature hydrogen dissociation with the increasing inert gas pressure in hydrogen mixtures
11:45 a.m.	Hironori Shinmori	Faculty of Engineering, WPI- I²CNER, Kyushu University	Friction and wear of polymer composites in high-pressure hydrogen gas
12:10 p.m.	Qian Chen	HYDROGENIUS, Kyushu University	Effect of trace moisture on the friction and wear of PTFE composites in high purity hydrogen gas environment
12:35 p.m.	Ma Tianze	Graduate School of Kyushu University	Temperature dependence of work-hardening behavior in nitrogen-bearing austenitic steel
Lunch			

Time	Speaker	Affiliation	Title
Session 2: Multiscale Science and Engineering for Energy and the Environment Thrust (MS3E) **＊ONSITE ONLY**			
2:00 p.m.	Hirokazu Kobayashi	K-NETs, WPI-I^{2}CNER, Kyushu University	Novel Metal Nanostructured Materials for Energy and Catalysis Applications
2:20 p.m.	Roman Selyanchyn	Q-PIT, WPI-I^{2}CNER, Kyushu University	Development of nanomembranes and membrane-base devices for CO_2 capture directly from the air
2:40 p.m.	Seiji Yamazoe	Tokyo Metropolitan University	DAC system using liquid-solid phase-separation and catalytic CO_2 conversion using metal oxide clusters
3:10 p.m.	Naoki Ousaka	K-NETs, WPI-I^{2}CNER, Kyushu University	CO_2 separation nanomembranes made of self-healing polymers prepared from α-lipoic acid derivatives
3:30 p.m.	Md. Amirul Islam	WPI-I^{2}CNER, Kyushu University	In Situ Metal Impregnation of MOFs: Advancing High-Efficiency Adsorption Heat Pumps and VOC Removal
3:50 p.m. ~ 4:10 p.m.	***Break***		
4:10 p.m.	Kazuhide Kamiya	Osaka University	Electrochemical Conversion of Gaseous CO_2: From Electrocatalysts to Electrolyzers
4:40 p.m.	Masaki Donoshita	IMCE, WPI- I^{2}CNER, Kyushu University	Cooperative Dual Redox Sites in a Dinuclear Cobalt Complex Lower the Overpotential of CO_2 Electroreduction
5:10 p.m.	Ladan Mirchegini	WPI-I^{2}CNER, Kyushu University	Strategies for Achieving Carbon Neutrality within the Chemical Industry
5:30 p.m.	Satoshi Horike	Graduate School of Science, Kyoto University	Metal-organic framework glasses and liquids for energy
6:00 p.m.	Shigenori Fujikawa	WPI-I^{2}CNER, Kyushu University	Closing Remarks