



INTERNATIONAL INSTITUTE FOR CARBON-NEUTRAL ENERGY RESEARCH

APPLIED MATH FOR ENERGY: FUTURE DIRECTIONS
I²CNER–IMI JOINT INTERNATIONAL WORKSHOP
APPLIED MATH FOR ENERGY

DATE: FRIDAY, JANUARY 31, 2020

TIME: 9:30 – 17:30

VENUE: ROOM 419, I²CNER BLDG. 1

Time	Speaker	Affiliation	Title
Combustion Session			
9:30 – 9:35	Kaname Matsue	IMI & I ² CNER	Opening address
9:35 – 10:05	Panlong Yu	KU	Direct numerical simulation and large-eddy simulation for a three-feed non-premixed combustion system
10:05 – 10:35	Kaname Matsue	IMI & I ² CNER	On numerical and mathematical description of premixed flame dynamics
10:35 – 10:55	Discussion (Chair: Kaname Matsue)		
Energy System Session			
11:00 – 11:30	Nguyen Dinh Hoa	I ² CNER & IMI	A unified distributed approach for various energy optimization problems
11:30 – 12:00	Andrew Chapman	I ² CNER	The Quantification of Social Equity Impacts in Energy Systems: Current Approaches and Future Directions
12:00 – 13:00	Lunch Break		
13:00 – 13:30	Junichi Murata	KU	Multi-level optimization for energy management
13:30 – 13:50	Discussion (Chair: Nguyen Dinh Hoa)		

Randomness and Machine Learning toward Materials and Energy Research Session			
13:55 – 14:25	Tomoyuki Shirai	IMI	Persistent homology and its applications
14:25 – 14:55	Yoshinobu Kawahara	IMI	Operator-theoretic data analysis for dynamic processes
14:55 – 15:35	Daniel Packwood	iCeMS, Kyoto University	Structure prediction and control for functional surface materials
15:35 – 16:15	Ryo Yoshida	The Institute of Statistical Mathematics	Materials Informatics: State-of-the-Art and Future Perspectives
16:15 – 16:35	Discussion (Chair: Kaname Matsue)		
16:35 – 16:45	Break		
16:45 – 17:25	Discussion among all participants on possible future directions of applied math for energy and workshop summary (Chair: Nguyen Dinh Hoa)		
17:25 – 17:30	Nguyen Dinh Hoa	I ² CNER & IMI	Summary