

PROGRAMME

July 2nd (Mon)

9:20- Registration

10:00-10:10 Welcome Talk (Prof. Keiya NISHIDA, Hiroshima Univ., Japan)

Session 1 (Chair Prof. Takayuki ICHIKAWA)

10:10-10:50 [K01](#) “Research and development of renewable hydrogen in FREA” (Dr. Taku TSUJIMURA, AIST, Japan)

10:50-11:30 [K02](#) “Metal hydrides: Emerging conversion-type anode materials for lithium ion batteries” (Prof. Jean-Pierre BONNET, Université de Picardie Jules Verne, France)

11:30-11:50 [I01](#) “Nanoporous Materials for Adsorbed Natural Gas” (Prof. Ateeque MALANI, IITB-Monash Research Academy, IIT Bombay, India)

11:50-12:10 [I02](#) “Internalising the external cost of Power generation-An approach to promote Renewable Energy based Power Plants” (Prof. Srinivasan PERIASWAMY, Head of The Department, Mechanical Engineering, Birla Institute of Technology & Science, India)

12:10-13:40 Lunch break

Session 2 (Chair Prof. Tomoyuki JOHZAKI)

13:40-14:20 [K03](#) “Fundamentals of combustion chemistry of novel fuels” (Prof. Karl Alexander HEUFER, Institute for Combustion Engine, RWTH Aachen University, Germany)

14:20-15:00 [K04](#) “Magnetized fast ignition research toward laser fusion energy” (Prof. Shinsuke FUJIOKA, Osaka University, Japan)

15:00-15:40 [K05](#) “Technology trends of 2nd generation bioethanol” (Dr. Kiyotaka SAGA, Biomaterial in Tokyo Co., Ltd., Japan)

15:40-16:00 Break

Session 3 (Chair Prof. Hiroki MIYAOKA)

16:00-16:40 [K06](#) “The future Internal combustion engine technologies for CO₂ reduction” (Mr. Toshihide YAMAMOTO, Mazda Motor Corporation, Japan)

16:40-17:20 [K07](#) “Recent activities on metal hydrides for energy storage at IFE” (Prof. Bjorn HAUBACK, Institute for Energy Technology, Norway)

17:20-17:50 General Discussion (Prof. Yukihiro MATSUMURA, Hiroshima Univ. Japan)

17:50-18:00 Administrative Circular

18:45-20:45 Banquet (Hakuwa Hotel, Shuttle bus service is available from Kurara)

July 3rd (Tue)

9:00- Registration

Poster Session

9:20-10:10 Poster Session 1 (Even number)

10:10-11:00 Poster Session 2 (Odd number)

11:00-12:40 Lunch break

Session 4 (Prof. Yoichi OGATA)

12:40-13:20 [K08](#) “Fugine: ultimate efficiency engine based on nearly complete air insulation and noiseless high compression for various targets including automobile and aerospace” (Prof. Ken NAITOH, Department of Applied Mechanics and Aerospace Engineering, Waseda Univ. Japan)

13:20-13:40 [I03](#) “Calculating methodology of CO₂ emissions from power plants for charging electric vehicles, and charging conditions for effectively reducing CO₂ emissions” (Prof. Koichi HATAMURA, Graduate School of Engineering, Hiroshima University, Japan)

13:40-14:00 [C01](#) “Emissions control of GCI engine fueled with gasoline-biodiesel blend using double injections strategy, EGR, and intake boosting” (Ocktaeck LIM, University of Ulsan (UOU) Mugeo-dong, Republic of Korea)

14:00-14:10 Break

Session 5 (Prof. Yutaka NAKASHIMADA)

14:10-14:30 [I04](#) “Fuel cell & catalytic applications of bimevov systems” (Prof. Banasri ROY, Department of Chemical Engineering, Birla Institute of Technology and Science (BITS) Pilani, India)

14:30-14:50 [C02](#) “Improved performance of Bi₂Te₃ as an anode material for all solid” (Pooja KUMARI, Department of Physics, Malaviya National Institute of Technology, India)

14:50-15:10 [C03](#) “Improvement of valuable lipid productivity of Aurantiochytrium sp. based on the metabolome analysis” (Kenshi WATANABE, Hiroshima University, Japan)

15:10-15:30 [C04](#) “Possibility of Carbon-Free Energy Generation capable of Circulation by means of Deep Water Electrolysis” (Masaharu KUBO, 1H3H Co. Ltd., Japan)

15:30-15:50 [C05](#) “Measurements of Chemical Ignition Delay Times of Nonane (C9) / Dodecane (C12) Isomers and Their Mixtures Using Non-diaphragm Shock Tube with CRV Strategy” (Yoshiki MATSUBARA, Hiroshima University, Japan)

15:50-16:00 Break

Session 6 (Prof. Leo MATSUOKA)

16:00-16:20 [I05](#) “Integration of Solid Oxide Fuel Cells (SOFC) in Low Temperature Co-fired Ceramics (LTCC) Technology Platform” (Prof. Siddhartha DUTTAGUPTA, Department of Electrical Engineering, Indian Institute of Technology Bombay, India)

16:20-16:40 [C06](#) “Fundamental Experiment of Engine with Octagonal Colliding Pulsed Supermulti-jets and Double Piston Unit for Very High Thermal Efficiency” (Hajime ITO, Graduate School of Fundamental Science and Engineering, Waseda University, Japan)

16:40-17:00 [C07](#) “The cure mechanism of gasoline and diesel deposit” (Yoshinori NAKAYAMA, NIPPON SOKEN, INC., Japan)

17:00-17:20 [C08](#) “Experimental study on macro-microscopic spray formation of biodiesel blended gasoline fuel in a constant volume chamber” (Kihyun KIM, School of Mechanical Engineering, University of Ulsan, Republic of Korea)

17:20-17:40 [C09](#) “A Free Piston Stirling Engine Operation through Waste Heat Recovery of a Diesel Engine Generator” (Youngmin WOO, Energy Saving Technologies Laboratory, Korea Institute of Energy Research, Republic of Korea)

17:40-18:00 Closing talk and Awarding

July 4th (Wed) Technical Tour

8:45 Meeting at Kurara

9:00 Departure for Shiwa Hydrogen station

9:30-10:30 Hydrogen station

10:30 Departure for SATAKE CORPORATION

11:00-12:30 SATAKE CORPORATION

13:00 Dismissing at Saijo station

List of Poster Presenters

- [P01](#) Hidetaka TAKAKI
Investigation of photochromism phenomenon at the interface of metal oxide and transparent conductive film
- [P02](#) Hiroki UESATO
Electrochemical Properties of High Dissociation Pressure Hydrogen Storage Alloy under Hydrogen Atmosphere
- [P03](#) Takashi KOMOTO
R&D on Secondary Battery using Hydrogen Storage Alloy and MnO₂
- [P04](#) Toshiro YAMAGUCHI
Ammonia Synthesis Reaction Properties and Dynamics of Li Alloy
- [P05](#) Katsuya NAMBA
Initial activation and high temperature characteristics of TiFe for chemical compressor
- [P06](#) Suganthamalar SELVARAJ
Hydrogen sorption and cyclic compressor performance of V-Ti-Cr system
- [P07](#) Yoshihiro TOMITA
The effect of film thickness of CNT gas sensor on sensor response
- [P08](#) So HAMAMOTO
Surface modification and Activity Evaluation of Ti for hydrogen storage
- [P09](#) Kento TOBINAGA
Synthesis and Evaluation of Yellow Phosphor by Doping Rare Earth Element
- [P10](#) Shuhei IJI
Processing of high salinity organic with marine sediment
- [P11](#) Ryota KONDO
Effect of grain size for microstructure of hydrogenated Mg plate
- [P12](#) Keiji TAKAGISHI
Characteristics of MgH₂-TiH₂ Li-ion Battery Anode
- [P13](#) Hiroyuki GI
Synthesis and Catalysis of Nb₂O₅ on MgH₂ hydrogen storage properties
- [P14](#) Tomoyuki ICHIKAWA
Low Cost Synthesis of Magnesium-Amide
- [P15](#) Yusuke NOBORU
Removal of ammonium, inhibitor of biodiesel production in Nitratireductor sp. OM –1, toward wastewater utilization
- [P16](#) Pratibha PAL
Investigation of ammonia storage properties of ammonium chloride and related materials
- [P17](#) Chunghyun LEE
Investigation of decomposition reaction of sodium magnesium amido-borane

- [P18](#) Fangqin GUO
Hydrogen Sorption Properties of $\text{NaNH}_2\text{-MgH}_2$ system
- [P19](#) Ryo OHATA
Electrolysis of Aqueous Ammonia as Hydrogen Generation Using Different Electrolytes
- [P20](#) Seiki SUGINO
Reaction Mechanism of Li-Mg-NH system
- [P21](#) Keita SHINZATO
Effect of Surface State on Hydrogenation Kinetics of Ti
- [P22](#) Keita NAKAJIMA
Spectroscopic analysis on $\text{NaBH}_4\text{-xNH}_3$ as ammonia storage
- [P23](#) Junichi OKI
Time-resolved stereo particle image velocimetry for measuring pulsating flow within a bend duct
- [P24](#) Yu JIN
The internal flow and near-field spray characteristics for V-type intersecting hole nozzles
- [P25](#) Onur AKGOL
Combined Effect of Injection Conditions and Impingement Distance on Heat Transfer Characteristics of Diesel Spray Flame Impinging on Flat-Wall
- [P26](#) Masatoshi MORITA
Raman spectroscopy for adsorbed hydrogen under critical temperatures of activated carbon
- [P27](#) Yoshitatsu SATO
Correlations for the onset of cellular instabilities in outwardly propagating spherical flames
- [P28](#) Honoka YOKORO
Development of a finesse tunable resonator for massive population control of cesium atoms
- [P29](#) Keishi NAKANO
Utilization of blue diode laser for detection and control of the alkali metal atomic vapor
- [P30](#) Mohammad MOJARRAD
Simultaneous production of 3-Hydroxypropionic acid and 1,3-Propanediol by psychrophile-based simple biocatalysts in *Shewanella* sp.
- [P31](#) Apip AMRULLAH
The Behavior of Phosphorus in Subcritical Water Gasification of Sewage Sludge
- [P32](#) Rahmat Iman MAINIL
Effect of Temperature on Reaction Mechanism of Glyceraldehyde Conversion in Sub and Supercritical Water
- [P33](#) Masamichi SEKI
Realization of practical chemical humidity control using spray tower gas-liquid contacting device
- [P34](#) Pattraporn CHANGSUWAN

Effect of feed flow rate on product distribution and gas composition of guaiacol conversion in supercritical water

[P35](#) Hiroki YOKOYAMA

Harmful Components in Liquid Phase after Hydrothermal Disk Mill Pulverization

[P36](#) Yuya KUSANO

Development of an experimental system for velocity measurement of light-induced drift of cesium atoms

[P37](#) Yasuhiro MATSUMURA

Anode Properties of Vanadium for Li-Ion Battery.

[P38](#) Ryo TAKEDOMI

Quantitative analysis of heat in ethanol fermentation

[P39](#) Yoshiharu YOSHIMURA

Development of a laser system for spatially-resolved measurement of the parameter distribution in an arcjet plasma

[P40](#) Yoshiki FUJIWARA

Phosphate Recovery from Hydrothermally Treated ATP using Calcium

[P41](#) Puji Rahmawati NURCAHYANI

Supercritical water gasification of oil removed *Chlorella* sp.

[P42](#) Kanta OGAWA

In-situ Mass Spectrometry for Hydrothermal Reaction Field – Detailed Discussion on Operating Condition

[P43](#) Yuta HIROSE

Possibility of Improving Pellet Stove Efficiency

[P44](#) Chia Ying LU

Electrochemical Properties of CoO as Negative Electrode for All-Solid-State Lithium-Ion Batteries

[P45](#) Norihiro MATSUBARA

Development of complex hydrides for fast ionic conduction

[P46](#) Novi SYAFTIKA

Behavior of lignocellulosic biomass in comparison with model compound mixtures under hydrothermal pretreatment and its effect on enzymatic hydrolysis

[P47](#) Noritaka NISHIYA

Numerical simulation of saturated absorption spectrum as a detection method of velocity-changing collisions

[P48](#) Shunki AKASAKI

Investigation of anti-knock properties of fuels by zero-dimensional kinetic modeling

[P49](#) Jun-ya MURATA

Quantum chemical study on the aromatic ring formation from propargyl radical derivatives

- [P50](#) Luo GONGLINFENG
Carboxylic acid production by psychrophilic-based simple catalyst
- [P51](#) Hirofumi EGUSA
Open up new horizon for the social acceptance of hydrogen energy: converting negative assets into renewable energy
- [P52](#) Kouhei FUKUYAMA
Emission spectroscopy of high-density helium plasmas in a cascade arc discharge source
- [P53](#) Takahiro SYUGYO
Development of a high-density Ar plasma source for plasma window application
- [P54](#) Mengli ZHANG
Fabrication of multi-walled carbon nanotube paper for sensing materials

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