

## Student Poster Session Summer School 2013 Yokohama, Japan

- M. Bodner, Investigation of active and passive alkaline direct ethanol fuel cells.
- C. Chaiburi, Performance decrease of platinum fuel cell catalyst by coolant leakage.
- R. Feiner, Chemical hydrogen storage through liquefaction of pyrolysis derived biochar: a new step towards biofuel from renewable resource.
- F. Gebetsroither, Development of segmented bipolar plates for spatial impedance spectroscopy on fuel cell stacks.
- C. Gehrler, Austrian participation on the Implementing Agreement on Advanced Fuel Cells.
- C. Grimmer, Activity of platinum first-row-transition-metal PTM/C cocatalysts.
- M. Higuchi, Numerical analysis of PEMFC unsteady performance considering water and thermal transport.
- Y. Horiuchi, In-situ measurements of temperature distributions of catalyst layer surfaces under ribs and channels using ultra thin film thermocouple array.
- R. Klambauer, Impedance measurement.
- M. Lammer, Generation of pure hydrogen via the steam-iron process.
- B. Marius, Investigation and characterisation of the contact mass in the steam-iron-process for hydrogen production, - purification and – storage.
- Y. Minegishi, Experimental study on water transport at the interface between polymer membranes and gas diffusion layers.
- T. Mizusawa, Cycle analysis of hydrogen generation systems with solid oxide electrolyte cells.
- T. Mutoh, Steam electrolysis using solid oxide electrolysis cells.
- S. Nestl, Biogas reforming for decentralised hydrogen production.
- Y. Nishijima, Electrohydrogenation of Toluene in three-phase boundary among  $H_2SO_4$ , Toluene and electrode.
- Y. Okada, Effect of re-heat treatment for stabilization and activation of zirconium oxide based electrocatalysts as PEFC cathode.
- B. Pichler, Manufacture and stability enhancement of platinum nickel co-catalysts for HT-PEM fuel cells.
- H. Pucher, Chemical hydrogen storage through hydrogenation of liquid phase pyrolysis oil.
- R. Strasser, Locating liquid water in an operating PEM fuel cell using neutron radiography.
- A. Schenk, Development of platinum cobalt co-catalysts for HT-PEM fuel cells.
- N. Uehara, Preparation the high active tantalum oxide-based catalyst toward oxygen reduction reaction for PEFC.
- H. Uryu, Effect of the amount of  $SiO_2$  additive in catalyst layer and electrolyte on the performance using room temperature molten salts without humidification.
- S. Weinberger, Simulation of spatial electrochemical impedance spectroscopy of fuel cell stacks.

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Forthcoming Summer School  
on Advanced Studies of PEFCs  
September 7<sup>th</sup> – 12<sup>th</sup>, 2014, Graz, Austria

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Institute of Chemical Engineering and  
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International  
Summer School  
on Advanced Studies of  
Polymer Electrolyte Fuel Cells

**YNU**  
YOKOHAMA National University

Yokohama National University  
Division of Materials Science and Engineering

## Student Impressions Summer School 2013 Yokohama, Japan

*"The scientific program was as interesting as the social program was entertaining and I am very grateful that I was able to participate in this Summer School."* (Merit)

*"The discussions with internationally renowned scholars, the professional training and the cultural exchanges constituted a very valuable experience for me."* (Alexander)

*"The summer school was a unique cultural and scientific experience. I am very impressed by scientific problem solving and commitment to research in Japan and I was definitely able to benefit from my stay."* (Christoph)

*"To see the test labs at Nissan Motor Co. and to go by Fuel Cell Vehicle was exciting!"* (Michael)

*"I'm very glad I could make Austrian friends! ...I'm grateful for getting the precious opportunity!"* (Naoki)

*"I was able to extend my knowledge about fuel cells ...but could also experience an unfamiliar and overwhelming, but very friendly and interesting country. The Japanese students were very welcoming...."* (Birgit)

*"The Summer School was a valuable experience and enrichment for my further scientific work."* (Stephan)

*"Thank you for giving us the great opportunity for this cultural exchange."* (Kazuaki)



## Lecturers Summer School 2013 Yokohama, Japan



Prof. Takuto Araki, Yokohama  
"The flow configuration, the diffusivity and the thermal conductivity of the GDL influence the mass and heat transport in a PEFC essentially."



Prof. Angelo Basile, Rende  
"Dense and Pd-supported membranes combined with a reformer unify hydrogen production and purification in one single device."



Prof. Bernd Eichberger, Graz  
"Impedance Spectroscopy is a non-invasive method for analysing frequency dependent phenomena of fuel cells."



Prof. Viktor Hacker, Graz  
"Better understanding of degradation mechanisms in PEFC enables further lifetime improvement."



Dr. Astrid Hofer, Graz  
"The direct oxidation of alcohols in alkaline fuel cells avoids the use of platinum catalysts."



Prof. Boniface Kokoh, Poitiers  
"The main kinetic parameters of the ORR are assessed by the application of Butler-Volmer and Koutecky-Levich equations."



Prof. Shigenori Mitsushima, Yokohama  
"Exact electrochemical measurements are the basis to determine performance related parameters."



Dr. Teko Napporn, Poitiers  
"Efficient electrode materials synthesized by various methods might lead to a significant decrease of noble metal loadings."



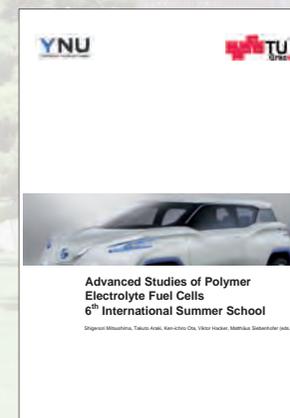
Prof. Ken-ichiro Ota, Yokohama  
"Hydrogen will be an essential ingredient in an energy economy with low environmental impact."



Dr. Uwe Reimer, Jülich  
"Modeling is a key to understanding the fundamental processes from electrode to stack and system level."



Dott. Gaetano Squadrito, Messina  
"Standardised procedures for lab-scale MEA preparation and characterisation are an integral part of material and component development."



Abstract Book  
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K.-I. Ota, V. Hacker,  
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