### Wednesday, 5 October

< Shuttle bus: Mito (8:00) to Oarai-site, registration (8:30-9:00) >

<table>
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| 09:00-09:15 | **Opening**  
T. Dujardin, OECD/NEA  
O. Oyamada, JAEA |
| 09:15   | **Session 1:** The Prospects for Hydrogen in Future Energy Structures and Nuclear Power's role.  
Chaired by M.C. Petri (ANL) |
| 09:15   | M. Hori (NSA), M. Numata, T. Amaya, Y. Fujimura  
Synergy of Fossil Fuels and Nuclear Energy for the Energy Future |
| 09:40   | G. Rothwell (Stanford Univ.), E. Bertel  
Can Nuclear Power Compete in the Hydrogen Economy? |
| 10:05   | S. Shiozawa (JAEA)  
Future Plan on Environmentally Friendly Hydrogen Production by Nuclear Energy |
| 10:30-10:50 | **BREAK** |
| 10:50   | **Session 2:** The Status of Nuclear Hydrogen Research and Development Efforts around the Globe.  
Chaired by M. Methnani (IAEA) / W.A. Summers (SRNL) |
| 10:50   | M. Hori (NSA), S. Shiozawa  
Research and Development for Nuclear Production of Hydrogen in Japan |
| 11:15   | D. Henderson (DOE), A. Taylor  
The U.S. Department of Energy Research and Development Program on Hydrogen Production Using Nuclear Energy |
| 11:40   | F. Le Naour (CEA)  
An Overview of the CEA Road-map for Hydrogen Production |
| 12:15-13:20 | **LUNCH** |
| 13:20   | Y. Sun (INET), Y. Zhang, J. Chen, Y. Xu, J. Xu, Z. Zhang  
R&D Effort on Nuclear Hydrogen Production Technology in China |
| 13:45   | A. I. Miller (AECL)  
Hydrogen: An Update on Canadian Activities |

Chaired by A. Miller (AECL) / K. Verfondern (FZ-Juelich)

11 15:15  X.L. Yan (JAEA), K. Kunitomi, R. Hino
GTHTR300 Design Variants for Production of Electricity, Hydrogen, or Both

12 15:40  M. Richards (GA), A. Shenoy, K. Schultz, L. Brown, E. Harvego, F. Okamoto, N. Handa
H2-MHR Conceptual Designs Based on the SI Process and HT E

13 16:05  P. Anzieu (CEA), P. Aujollet, D. Barbier, A. Bassi, F. Bertrand, A. Le Duigou, J. Leybros, G. Rodriguez
Coupling a Hydrogen Production Process to a Nuclear Reactor

14 16:30  T. Iyoku (JAEA), N. Sakaba, S. Nakagawa, Y. Tachibana, S. Kasahara, K. Kawasaki
HTTR Test Program towards Coupling with the IS Process

15 16:55  H. Ohashi (JAEA), Y. Inaba, T. Nishihara, T. Takeda, K. Hayashi, Y. Inagaki
Current Status of Research and Development on System Integration Technology for Connection between HTGR and Hydrogen Production System at JAERI

PHOTOGRAPH 17:25

DINNER at Asahi-bunshitsu, 18:00 - 20:00

Thursday, 6 October

Session 4: Nuclear Hydrogen Technologies and Design Concepts.

Chaired by K.Kunitomi(JAEA) / J.S.Herring (INL)

16 09:00  K. Onuki (JAEA), S. Kubo, A. Terada, N. Sakaba, R. Hino
Study on Thermochemical Iodine-Sulfur Process at JAERI

17 09:25  S. Kubo (JAEA), S. Shimizu, H. Nakajima, K. Onuki
Studies on Continuous and Closed-cycle Hydrogen Production by Thermo-chemical Water-splitting Iodine-Sulfur Process at JAERI

Experimental and Analytical Results on H2SO4 and SO3 Decomposers
A Scoping Flowsheet Methodology for Evaluating Alternative Thermochemical Cycles

**Break 10:40 – 11:00**

**Chair by K.Kunitomi (JAEA) / J.S.Herring (INL)**

10:15 M.A. Lewis, M.C. Petri (ANL), J.G. Masin

Study of the Hybrid Cu-Cl Cycle for Nuclear Hydrogen Production

10:25 M.A. Khan, Y.T. Chen (Univ. Nevada)

Preliminary Process Analysis and Simulation of Thermo-chemical Hydrogen Generation Using Copper-Chlorine Cycle

10:50 W.A. Summers (SRNL), M.B. Gorensek, M.R. Buckner

The Hybrid Sulfur Cycle for Nuclear Hydrogen Production

**Lunch 12:15 - 13:20**

**Chair by Y.J. Shin (KAERI) / T.Takeda (JAEA)**

11:00 S. Suppiah (AECL), J. Li, R. Sadhankar, M. Lewis

Study of the Hybrid Cu-Cl Cycle for Nuclear Hydrogen Production

11:25 M.A. Khan, Y.T. Chen (Univ. Nevada)

Preliminary Process Analysis and Simulation of Thermo-chemical Hydrogen Generation Using Copper-Chlorine Cycle

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The Hybrid Sulfur Cycle for Nuclear Hydrogen Production

**Break 14:35 - 14:55**

**Chair by Y.J. Shin (KAERI) / T.Takeda (JAEA)**

13:20 P. Anzieu (CEA), P. Carles, A. Le Duigou, X. Vitart, F. Lemort

The Sulfur-Iodine and Others Thermochemical Processes Studies at CEA


A Study on Hydrogen Production by Thermochemical Water-splitting IS Process

14:10 P. Zhang (INET), B. Yu, J. Xu

Present Research Status and Development Plan of Nuclear Hydrogen Production Programme in NET

**Break 16:10 - 16:30**

**Chair by Y.Kato (TITEch)**

14:55 T. Nakagiri (JAEA), T. Kase, S. Kato, K. Aoto

Development of the Thermochemical and Electrolytic Hybrid Hydrogen Production Process for Sodium Cooled FBR


Progress in High-temperature Electrolysis for Hydrogen Production

15:45 Y. Kato (TITEch)

Possibility of a Chemical Hydrogen Carrier System Based on Nuclear Power

**Break 16:10 - 16:30**

**Session 5: Basic and Applied Science in Support of Nuclear Hydrogen Production.**

**Chair by Y.Kato (TITEch)**

16:30 C.H. Kim (KIER), G.J. Hwang, C.S. Park, S.H. Lee, B.K. Kim, K.K. Bae

A Study on the HI Concentration by Polymer Electrolyte Membrane Electrodiagnosis
Friday, 7 October

Session 5 (continued):

Chaired by P.Anzieu (CEA) / Y.Sun (INET)

31 09:00  H. Karasawa (Hitachi), A. Sasahira, K. Hoshino
Thermal Decomposition of SO$_3$

32 09:25  S. Fukada (Kyushu Univ.), K. Onoda, S. Suemori
Direct Energy Conversion by Proton-conducting Ceramic Fuel Cell Supplied with CH$_4$ and
H$_2$O at 600 – 800°C

33 09:50  M. Ozawa (JAEA), R. Fujita, T. Suzuki, Y. Fujii
Separation and Utilization of Rare Metal Fission Products in Nuclear Fuel Cycle as for
Hydrogen Production Catalysts

BREAK 10:15 - 10:35

Chaired by P.Anzieu (CEA) / Y.Sun (INET)

34 10:35  H. Kawamura, M. Mori, S.Z. Chu (CRIEPI), M. Uotani
Electrical Conductive Perovskite Anodes in Sulfur-based Hybrid Cycle

35 11:00  Y. Izumizaki (TTTech), K.C. Park, Y. Tachibana, H. Tomiyasu, Y. Fujii
Generation of H$_2$ by Decomposition of Pulp in Supercritical Water with Ruthenium(IV)
Oxide Catalyst

11:30-12:00  Discussions and Preparation of Recommendations for the Path Forward
Chaired by R.Hino (JAEA) / M.C.Petri (ANL)

End of the NEA meeting ; 12:10

12:15-13:20  LUNCH

Special session in the framework of second HTTR workshop (pm, 7 October)

13:20-14:50  JAEA’s R&D Activities on Gas Turbine, Fuel etc.
Presentation by K. Sawa / JAEA /Japan
S. Nakagawa / JAEA /Japan
Y. Tachibana / JAEA /Japan
S. Takada / JAEA /Japan
(Chairman T.Iyoku / JAEA /Japan)

14:50-15:05  BREAK
15:05-15:20  Concluding Remarks
Y. Komori / JAEA / Japan

15:20-16:50  Technical Tour ; HTTR and Hydrogen Production Apparatus

< Shuttle bus : Oarai-site to Mito >