# Hydrogen Storage Conference

# **Quick Guide to Posters**

## Metal Hydrides

- 1. **PRESSURE HYSTERESIS IN METAL-HYDROGEN SYSTEMS** A.L.Shilov, Institute of General and Inorganic Chemistry of the Russian Academy of Sciences
- 2. THE POTENTIAL OF ALUMINUM HYDRIDE FOR VEHICULAR HYDROGEN STORAGE James Reilly, Brookhaven National Laboratory, USA
- 3. HYDROGEN STORAGE IN MODIFIED TITANIUM-BASED ALLOYS S. Mitrokhiin, Chemistry Department, Lomonosov Moscow State University, Russia
- STUDY OF LAVES PHASES ZR<sub>0.5</sub> TI<sub>0.5</sub>NI<sub>Y</sub>V<sub>0.5</sub>MN<sub>x</sub> MH ELECTRODE ALLOYS: COMPOSITION INFLUENCE ON HYDROGEN STORAGE AND ELECTROCHEMICAL CHARACTERISTICS Zotov T.A., Moscow State University, Chemistry Department, Russia
- TRANSFORMATION MECHANISMS OF ALANATE COMPOSITES Maximilian Fichtner, Patrizia Canton, Aline Léon, Research Center Karlsruhe, Institute of Nanotechnology, Germany
- 6. THERMODYNAMICS, HYDROGENATION KINETICS AND NMR INVESTIGATION OF DOPED MAGNESIUM HYDRIDES

A.Ye. Yermakov, Institute of Metal Physics of the Ural Branch of RAS, Russia

- 7. SOLID STATE HYDROGEN STORAGE SYSTEM DEVELOPMENT Donald L Anton, United Technologies Research Center, USA
- 8. DOPED SODIUM ALUMINUM HYDRIDE: DEVELOPMENT AND FUNDAMENTAL STUDIES OF A PROMISING NEW HYDROGEN STORAGE MATERIAL
- Craig Jensen, K. Kuba, S. Srinivasan, M. Sulic, University of Hawaii, Department of Chemistry, USA
  9. RECENT DEVELOPMENT OF PROMISING STORAGE MATERIAL: LI-MG-N-H Weifang Luo, Sandia National Laboratories, USA
- OVERVIEW OF DOE METAL HYDRIDE CENTER OF EXCELLENCE James Wang, Sandia National Laboratories, USA
- 11. ADVANCED HYDROGEN STORAGE MATERIALS Karl J. Gross, Sandia National Laboratories, USA
- 12. ROLE OF MGO AS SINTERING INHIBITOR IN HYDROGEN ABSORPTION BY MG AND MG-BASED ALLOYS
  - Gerasimov Konstantin B., Institute of Solid State Chemistry and Mechanochemistry SB RAS, Russia
- 13. HYDROGEN STORAGE PROPERTIES AND REACTION MECHANISM OF LI-MG-N-H SYSTEM H. Leng, Hiroshima University, Japan
- 14. HYDRÖGEN STORAGE PRÖPERTIES OF LI-C-H SYSTEM Takayuki Ichikawa, Materials Science Center, N-BARD, Hiroshima University, Japan
- 15. COMPOSITE MATERIALS COMPOSED OF LIGHT ELEMENTS FOR HYDROGEN STORAGE Hironobu Fujii, Materials Science Center, N-BARD, Hiroshima University, Japan
- 16. CATALYTIC EFFECT OF ZRCL4 AND HFCL4 ON HYDROGEN ABSORPTION/DESORPTION OF METAL HYDRIDES
- Pramoch Rangsunvigit, Petroleum and Petrochemical College, Chulalongkorn University, Thailand 17. SIZE DOES MATTER: NANOSIZED MAGNESIUM FOR HYDROGEN STORAGE
- Rudy Wagemans, Dept. Inorganic Chemistry and Catalysis, Debye Institute, Utrecht University, Netherlands
- 18. **MICROSTRUCTURAL AND HYDROGEN SORPTION PROPERTIES OF THE LANI<sub>5-X</sub>AL<sub>x</sub>-H<sub>2</sub> SYSTEM P. Moretto, European Commission-Joint Research Centre-Institute for Energy, Netherlands**
- 19. DISCOVERY OF NOVEL COMPLEX METAL HYDRIDES FOR HYDROGEN STORAGE THROUGH MOLECULAR MODELING AND COMBINATORIAL METHODS J.W. Adriaan Sachtler, UOP LLC, USA
- 20. FACTORS AFFECTING HYDROGEN RELEASE FROM LITHIUM ALANATE Joachim H. Schneibel, Metals and Ceramics Division, Oak Ridge National Laboratory, USA
- 21. STRUCTURES AND EFFECT OF ADDITIVES IN ALANATES Bjørn C. Hauback, Institute for Energy Technology, Norway

22. PROTON CONDUCTIVE CERAMIC CATALYSTS FOR ENHANCING HYDROGEN REACTION KINETICS OF NANOSTRUCTURED MG-BASED COMPOSITES Yeong Yoo, Institute for Chemical Process and Environmental Technology, National Research Council of Canada 23. HYDROGEN ABSORPTION FROM GAS MIXTURE IN A METAL-HYDRIDE REACTOR: MATHEMATICAL MODEL AND NUMERICAL RESULTS D.O. Lazarev, Moscow Power Engineering Institute, Russia 24. THERMOGRAVIMETRIC MEASUREMENT AND MODELING OF THE HYDROGEN SORPTION **KINETICS ON LANI5** Giovanni Restuccia, CNR-ITAE, Italy 25. PHASE FORMATION AND REACTION PATHWAY OF MG(NH2)2 + 2LIH MIXTURE FOR **REVERSIBLE HYDROGEN STORAGE** J.-C. Zhao, GE Global Research, USA 26. CHEMICAL AND MORPHOLOGICAL CHANGES OF TI-CATALYZED NAALH4 DURING HYDROGEN STORAGE Job T. Rijssenbeek, GE Global Research, USA 27. MONITORING OF CHEMICAL REACTIONS AND POINT DEFECT DYNAMICS IN ALANATES R. Cantelli, Università di Roma "La Sapienza", Dipartimento di Fisica, Italy 28. MODIFIED ALANATES FOR HYDROGEN STORAGE Ragaiy Zidan, Savannah River National Laboratory, USA 29. STRUCTURAL STUDIES OF HYDROGEN-STORAGE MATERIALS: COMPLEX HYDRIDES AND MOF'S A. Albinati, Department of Structural Chemistry, University of Milan, Italy 30. HYDROGEN STORAGE IN THE MG-AL SYSTEM R. Vijay, International Advanced Research Centre for Powder Metallurgy and New Materials, India 31. HYDROGEN STORAGE IN NIOBIUM DOPED MAGNESIUM Antonio Miotello, Department of Physics, Trento University, Italy 32. CLAMPING EFFECT IN INTERMETALLIC - HYDROGEN SYSTEMS I. Jacob, Ben-Gurion University of the Negev, Israel 33. PRESSURE INDUCED PHASE TRANSFORMATIONS IN LI AL HYDRIDES Dhanesh Chandra, University of Nevada, Reno, USA 34. HYDROGEN STORAGE IN LIGHT METAL HYDRIDES V.Verbetsky, Chemistry Department Moscow State University, Russia 35. MAGNESIUM BASED COMPOSITES FOR HYDROGEN STORAGE Boris P.Tarasov, Institute of Problems of Chemical Physics of RAS, Russia 36. EQUILIBRIUM PRESSURE MEASUREMENT OF INORGANIC HYDROGEN STORAGE MATERIALS Tetsu Kiyobayashi, National Institute of Advanced Industrial Science and Technology, Japan 37. HYDROGEN STORAGE IN NANOSIZED MG-NI(FE) ALLOYS Giovanni PRINCIPI. Settore Materiali. DIM. Università di Padova. Italy 38. NEW DEVELOPEMENTS IN THE DIRECT SYNTHESIS OF TI-DOPED SODIUM ALANATE HYDROGEN STORAGE MATERIAL Michael Felderhoff, Max-Planck Institut für Kohlenforschung, Germany **39. CHEMICAL ACTIVATION OF MgH2; A NEW ROUTE TO SUPERIOR HYDROGEN STORAGE** MATERIALS Simon R. Johnsona, b, Paul A. Andersona, Peter P. Edwards\*b, Ian Gamesona, James W. Prendergasta, Malek Al-Mamouric, David Bookc, I. Rex Harrisc, John D. Speightc and Allan Waltonc William I. F. Davidd a School of Chemistry, The University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK. b Inorganic Chemistry Laboratory, University of Oxford, South Parks Road, Oxford, OX3 3QR, UK. c Department of Metallurgy and Materials, School of Engineering, The University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK. d ISIS Facility, Rutherford Appleton Laboratory, Chilton, OX11 0QR, UK.

### **High Surface Area Materials**

- 1. **POROUS SILICON NANOSTRUCTURES AS HYDROGEN RESERVOIRS** Vladimir Lysenko, INSA de Lyon, LPM, France
- 2. INELASTIC NEUTRON SCATTERING STUDIES OF THE ADSORPTION OF MOLECULAR HYDROGEN ON SURFACES Keith Ross, University of Salford, UK
- 3. CARBON NANOSTRUCTURES HYDROGENATED UNDER HIGH PRESSURE V.E. Antonov, Institute of Solid State Physics RAS, Russia
- 4. **METAL-ASSISTED HYDROGEN STORAGE IN NANOSTRUCTURED CARBONS** Nidia C. Gallego, Oak Ridge National Laboratory, USA
- 5. HYDROGEN STORAGE IN INORGANIC NANOSTRUCTURED MATERIALS Hae Jin Kim, Energy Nano Material Team, Korea Basic Science Institute
- 6. **HYDROGEN STORAGE IN NANOPOROUS MATERIALS** Richard Chahine, Hydrogen Research Institute, Canada
- 7. FAST DYNAMICS, GAS ADSORPTION AND BUNDLE MOTION IN CARBON NANOTUBES A. Paolone, Università di Roma "La Sapienza", Dipartimento di Fisica, Italy
- 8. ACTIVATION OF GRAPHITIC NANOFIBRES FOR THE STORAGE OF HYDROGEN Gavin S Walker, University of Nottingham, UK
- 9. HYDROGEN STORAGE IN ION-EXCHANGED ZEOLITES David Book, University of Birmingham, UK
- 10. HYDROGEN ADSORPTION/DESORPTION ON METAL FUNCTIONALIZED SWNTS M.T. Martínez, Instituto de Carboquímica CSIC, Spain
- 11. ISSUES OF MOLECULAR ENERGETICS IN THE REVERSIBLE HYDROGEN-CARBON NANOTUBE BINDING

Boris I. Yakobson, Rice University, USA

- 12. SILICATE BASED MOLECULARLY ENGINEERED MATERIALS FOR STORAGE OF HYDROGEN S.S. Rayalu, Environmental Materials Unit, National Environmental Engineering Research Institute, India
- 13. THERMODYNAMICS OF ADSORPTION OF HYDROGEN ON HIGH SPECIFIC SURFACE CARBONS OVER WIDE TEMPERATURE AND PRESSURE RANGES Pierre Bénard, Institut de recherche sur l'hydrogène,Université du Québec à Trois-Rivières, Canada
- CONDUCTING POLYMERS AS POTENTIAL NEW MATERIALS FOR HYDROGEN STORAGE Alan G. MacDiarmid, Dept. of Chemistry, University of Pennsylvania, USA
- 15. COMPARISON OF ELECTROCHEMICAL HYDROGEN STORAGE BEHAVIORS OF CARBON NANOTUBES SYNTHESIZED BY VARIOUS GROWTH METHODS Kee Suk Nahm, Chonbuk National University, Korea
- 16. HYDROGEN ADSORPTION ON CARBON NANOPARTICLES AT LOW TEMPERATURES H. Hermann, IFW Dresden, Germany
- 17. GAS ADSORPTION IN CARBON-BASED MATERIALS STUDIED BY NMR Yue Wu, University of North Carolina, USA

## **Chemical Hydrides**

- 1. NOVEL APPROACHES FOR ON-BOARD CHEMICAL HYDROGEN STORAGE Tom Autrey, Pacific Northwest National Laboratory, USA
- 2. THE US DOE CENTER OF EXCELLENCE IN CHEMICAL HYDROGEN STORAGE: STRUCTURE AND COLLABORATIVE PROJECTS
  - Chris Aardahl, Pacific Northwest National Laboratory, USA
- 3. HYDROGEN STORAGE BY ORGANIC CHEMICAL HYDRIDES AND HYDROGEN SUPPLY TO FUEL **CELLS WITH SUPERHEATED LIQUID-FILM-TYPE CATALYSIS** Shinya Hodoshima, Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Japan
- 4. HYDROGEN STORAGE BY ORGANIC CHEMICAL HYDRIDES AND HYDROGEN SUPPLY TO FUEL **CELLS WITH SUPERHEATED LIQUID-FILM-TYPE CATALYSIS** Shinya Hodoshima, Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Japan
- 5. HYDROGEN ALLOYING AND MECHANOSYNTHESIS OF CHEMICAL HYDRIDES IN MECHANICAL **ALLOYING MILLS** 
  - Z.S. Wronski, Canada Centre for Minerals and Energy Technology
- 6. BOROHYDRIDES FOR HYDROGEN STORAGE. THERMOLYSIS OR HYDROLYSIS ADVANTAGES AND DISADVANTAGES
  - B.Bonnetot, L.M.I., University LYON I, France
- 7. INVESTIGATION OF SUBSTITUTED AMMONIA-BORANES FOR CHEMICAL HYDROGEN STORAGE
  - M.E. Bowden, Industrial Research Limited, New Zealand
- 8. HYDROGEN PRODUCTION FROM HYDROLYSIS OF SODIUM BOROHYDRIDE AT ROOM TEMPERATURE

Ashwin Kale, Department of Physics, Trento University, Italy

9. MG- AND BOROHYDRIDE-BASED MATERIALS FOR USE IN HYDROGEN STORAGE **APPLICATIONS** 

David Book, University of Birmingham, UK

- 10. ON-BOARD CHEMICAL HYDRIDE STORAGE SYSTEMS Tarek Abdel-Baset, DaimlerChrysler, USA
- 11. REGENERABLE BORON NITROGEN HYDRIDES FOR HYDROGEN STORAGE ON-BOARD A VEHICLE

Ashok Damle, RTI International, Research Triangle Park, North Carolina, USA Pavel Storozhenko, State Scientific Research Center (GNIIChTEOS, Moscow) of Russian Federation

- 12. DOE CHEMICAL HYDROGEN STORAGE CENTER OF EXCELLENCE William Tumas, Los Alamos National Laboratory, USA
- 13. HIGH-DENSITY STORAGE OF HYDROGEN IN METAL AMMINE COMPLEXES BRIDGING THE HYDROGEN AND AMMONIA ECONOMY

Tue Johannessen, Department of Chemical Engineering, Technical University of Denmark. Denmark

#### <u>General</u>

- 1. EC-JRC ACTIVITIES ON SOLID STATE HYDROGEN STORAGE C. Filiou, European Commission-Joint Research Centre- Institute for Energy, Netherlands
- 2. IEA HIA: 25 YEARS OF COOPERATION TOWARD THE NEXT GENERATION OF HYDROGEN R,D&D
- Mr. Trygve U. Riis, IEA Hydrogen Implementing Agreement (HIA), USA 3. APPROACHING DOE HYDROGEN STORAGE LONG-TERM GOALS
- Pier Paolo Prosini, ENEA-IDROCOMB, Italy
- 4. COMPOUNDS: PREDICTED MH12 SPECIES Laura Gagliardi, University of Palermo, Italy
- 5. **ISOLATED METAL MOLECULES FOR HYDROGEN STORAGE: PREDICTED MH12 SPECIES** Laura Gagliardi, University of Palermo, Italy
- 6. **GM'S PROGRESS IN HYDROGEN STORAGE** Scott Jorgensen, General Motors, USA
- 7. HYDROGEN SUPPLY SYSTEMS FOR DIESEL ENGINES IN MUNICIPAL TRANSPORTATION Richard Uchrin, AUXO Limited , Hungary
- 8. **MICROSCOPIC INVESTIGATION OF HYDROGEN-STORAGE MATERIALS** Marco Zoppi, CNR-ISC: Sezione di Firenze, Italy
- 9. MULTISCALE MODELLING AND OPTIMIZATION OF HYDROGEN SOLID STORAGE SYSTEMS A.K. Stubos, NCSR Demokritos, Greece