

ICMR Symposium on Materials Issues in Hydrogen Production and Storage
University of California, Santa Barbara
August 20– 26, 2006

Sunday, August 20, 2006	
12:00 pm onward	Check in at Manzanita Village
5:30 pm to 7:30 pm	Reception and Registration at Lagoon Plaza, University Center
Monday, August 21, 2006 – Multicultural Center Theater	
7:30 am to 8:30 am	Breakfast at Carrillo Dining Commons*
8:00 am to 8:45 am	Registration at Multicultural Center Theater
8:45 am to 9:15 am	Opening Session
9:15 am to 10:00 am	Invited: <u>M. Dresselhaus</u> , “Basic Research Needs for the Hydrogen Economy”
10:00 am to 10:20 am	Break
10:20 am to 11:05 am	Invited: <u>L. Schlapbach</u> , A. Züttel, “Hydrogen Storage for Mobility, a Challenge for Materials Science and Technology”
11:05 am to 11:50 am	Invited: <u>M. Grätzel</u> , A. Kay, I. Cesar, “Solar Generation of Hydrogen from Water in Tandem Cells using nanostructured α -Fe ₂ O ₃ Films”
12:00 pm to 1:00 pm	Lunch at the De La Guerra Dining Commons (served from 12-1:00 pm)*
2:00 pm to 2:45 pm	Invited: <u>C.M. Jensen</u> “Advanced Complex Hydrides: Development and Fundamental Studies of Promising New Hydrogen Storage Materials”
2:45 pm to 3:30 pm	Invited: <u>O. Løvvik</u> , S.M. Opalka, “Density-functional Calculations of New Alanates”
3:30 pm to 3:50 pm	Break
3:50 pm to 4:10 pm	Contributed: <u>M. Van Setten</u> , G.A. de Wijs, G. Brocks, “Complex Metal Hydrides: Trends in Formation Enthalpy”
4:10 pm to 4:30 pm	Contributed: <u>A. Peles</u> , C. Van de Walle, “Hydrogen-related Defects in Sodium Alanate”
4:35 pm to 5:20 pm	Invited: <u>G. Pez</u> , A. Cooper, B. Toseland, K. Campbell, “Hydrogen Storage in the Context of a Liquid Carrier Infrastructure”
5:30 pm to 6:30 pm	Dinner at the Carrillo Dining Commons*
Tuesday, August 22, 2006 – Multicultural Center Theater	
7:30 am to 8:30 am	Breakfast at Carrillo Dining Commons
8:30 am to 9:15 am	Invited: <u>M. Darensbourg</u> , “Biomimetic Hydrogen Production”
9:15 am to 10:00 am	Invited: <u>A. Melis</u> , “Issues in Photobiological Hydrogen Production”
10:00 am to 10:20 am	Break

* Breakfast, lunch and dinner arrangements are for participants holding meal cards.

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10:20 am to 11:05 am	Invited: <u>C. Read</u> , G. Ordaz, G. Thomas, S. Satyapal, "Materials Issues in Hydrogen Storage and Production: Recent Developments in the US Department of Energy's R&D Portfolio"
11:05 am to 11:50 am	Invited: <u>J. K. Johnson</u> , S.V. Alapati, B. Dai, J. Liu, D.S. Scholl, "Atomistic Simulation of Hydrogen Storage in Metal Hydrides and Nanoporous Sorbents"
12:00 pm to 1:00 pm	Lunch at the De La Guerra Dining Commons (served from 12-1:00 pm)
2:00 pm to 2:45 pm	Invited: Z. Xiong, G. Wu, J. Hu, Y. Liu, <u>P. Chen</u> , "Development of Metal-N-H Systems for Hydrogen Storage"
2:45 pm to 3:30 pm	Invited: <u>F. Pinkerton</u> , G. Meisner, M.S. Meyer, M.P. Balogh, "New Li-B-N-H Quaternary Hydride"
3:30 pm to 3:50 pm	Break
3:50 pm to 4:20 pm	Invited: <u>W. Kohn</u> , "Remarks on Immediate Energy Challenges"
4:20 pm to 5:15 pm	Film: "The Power of the Sun" (Executive Produced: W. Kohn; Host and Narrator: John Cleese)
5:30 pm to 6:30 pm	Dinner at the Carrillo Dining Commons
Wednesday, August 23, 2006 – Multicultural Center Theater	
7:30 am to 8:30 am	Breakfast at Carrillo Dining Commons
8:30 am to 9:15 am	Invited: <u>M. Henderson</u> , "Photochemistry on Single Crystal TiO ₂ Surfaces"
9:15 am to 10:00 am	Invited: <u>A. Kudo</u> , "Visible-light-driven Photocatalyst Materials for Water Splitting"
10:00 am to 10:20 am	Break
10:20 am to 11:05 am	Invited: <u>J. Norskov</u> , "Hydrogen Production and Storage by Catalysis"
11:05 am to 11:50 am	Invited: <u>E. McFarland</u> , "New Materials for Photoelectrocatalytic Production of Hydrogen From Sunlight"
12:00 pm to 1:00 pm	Lunch at the De La Guerra Dining Commons (served from 12-1:00 pm)
2:00 pm to 5:15 pm	Poster Session at the State Street and Harbor Rooms, University Center Ground Floor
6 :00 pm to 8 :30 pm	Banquet Dinner at the Lagoon Plaza, University Center
Thursday, August 24, 2006 – Multicultural Center Theater	
7:30 am to 8:30am	Breakfast at the Carrillo Dining Commons
8:30 am to 9:15 am	Invited: <u>P. Jena</u> (Virginia Commonwealth), "Materials for Hydrogen Storage: From Nanostructures to Complex Hydrides"
9:15 am to 10:00 am	Invited: N. Hess, J. Linehan, W. Shaw, D. Camaioni, A. Stoew, M. Gutowski, <u>T. Autrey</u> , "Chemical Hydrides: Amine Boranes"
10:00 am to 10:20 am	Break

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10:20 am to 11:05 am	Invited: <u>D.M. Heinekey</u> , K. I. Goldberg, D. Mery, B. Dietrich, T.J. Hebden, "Efficient Catalysis of Amineborane Dehydrogenation"
11:05 am to 11:25 am	Contributed: <u>N. Dalal</u> (Florida State U.), "Dielectric, NMR and Raman Studies of Hydrogen-bonded, Hydrogen-Storage Materials"
11:25 am to 11:45 am	Contributed: <u>C. Miranda</u> , G. Ceder, "Ab-initio investigation of Ammonia-Borane complexes for hydrogen storage"
12:00 pm to 1:00 pm	Lunch at the De La Guerra Dinning Commons (served from 12-1:00 pm)
2:00 pm to 2:20 pm	Contributed: <u>T. Czujko</u> , R. Varin, E. Wasmund, Z. Wronski, "Recent Advances in the Improvement of Hydrogen Desorption Properties of MgH_2 "
2:20 pm to 2:40 pm	Contributed: M.J. van Setten, <u>G. de Wijs</u> , G. Brocks, "Transition metal doping in LT Mg_2NiH_4 : DFT study of the energetic and optical changes"
2:40 pm to 3:00 pm	Contributed: <u>M. Jones</u> , W. David, S. Johnson, D. Gregory, C. Jewell, A. Walton, P. Edwards, "A Non-Stoichiometric Mechanism for the Lithium Amide/ Imide Hydrogen Storage Reaction"
3:00 pm to 3:20 pm	Contributed: <u>J. Germain</u> , J. Fréchet, F. Svec, "High Surface Area Nanoporous Polymers for Reversible Hydrogen Storage"
3:30 pm to 3:50 pm	Break
3:50 pm to 4:35 pm	Invited: <u>J. Turner</u> , T. Deutsch, J. Leisch, "Semiconductor Materials and Tandem cells for Photoelectrochemical Hydrogen Production: $GaP_{1-x}N_x$ and $Cu(In,Ga)(Se,S)$ Systems"
4:35 pm to 5:20 pm	Invited: <u>J. Vohs</u> , "Novel Approaches for the Electrolysis of Water in Solid Oxide Electrolyzers"
5:30 pm to 6:30 pm	Dinner at Carrillo Dining Commons
Friday, August 25, 2006 – Multicultural Center Theater	
7:30 am to 8:30 am	Breakfast at Carrillo Dining Commons
8:30 am to 9:15 am	Invited: <u>O. Yaghi</u> , "7.5% wt Hydrogen Storage in Metalorganic Frameworks"
9:15 am to 10:00 am	Invited: <u>S. Zhang</u> , Y. Zhao, Y.H. Kim, A. Williamson, A.C. Dillon, M.J. Heben, "Nanostructured Materials for Room-Temperature Reversible Hydrogen Storage: A First-Principles Study"
10:00 am to 10:20 am	Break
10:20 am to 10:40 am	Contributed: P. Forster, J. Eckert, J.S. Chang, A.K. Cheetham, J.B. Parise, "It's not just surface area; The role of chemistry in determining hydrogen uptake in porous systems"
10:40 am to 11:00 am	Contributed: <u>T. Baumann</u> , J. Satcher Jr., H. Kabbour, C. Ahn, "Metal-Loaded Carbon Aerogels for Hydrogen Storage"
11:00 am to 11:20 am	Contributed: <u>Y. Gogotsi</u> , "Tailored Nanoscale Porosity in Carbide-Derived Carbons: Optimization for High Capacity Hydrogen Storage"
11:20 am to 11:40 am	Contributed: <u>D. P. Serrano</u> , J.A. Botas, R. Gui-López, "CO ₂ -free hydrogen production by catalytic CH ₄ decomposition using carbon materials as catalysts: Preliminary studies of the control of the morphology of produced carbon"

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2:00 pm to 2:45 pm	Invited: <u>E. Wachsman</u> , "Hydrogen Production With Mixed Protonic-Electronic Conducting Perovskite Membranes"
2:45 pm to 3:30 pm	Invited: <u>G. Kubas</u> , J. Cross, M. Schlaf, B. Scott, "Synthesis, Structure, and Bonding Aspects of the Reversible Binding of Dihydrogen to Materials for Hydrogen Storage and Production"
3:30 pm to 4:00 pm	Break
5:30 pm to 6:30 pm	Dinner at De La Guerra Dinning Commons
Saturday, August 26, 2006 – Free Day	
7:30 am to 8:30am	Breakfast at Carrillo Dining Commons
8:30 am to 12:00 pm	Checkout must be completed by 12:00 PM