



NIS Colloquium

Materials for Hydrogen Storage

Torino, February 15th, 2013

Aula Diagonale, Dipartimento di Chimica, Università di Torino
Via P.Giuria 7, 10125 TORINO

PROGRAMME

- 9.00-9.10 *Introduction*
- 9.10-9.20 **Silvia BORDIGA** – NIS Director, Università di Torino
“Activities on Hydrogen Storage Materials at NIS”
 S. Bordiga, G. Spoto, P. Ugliengo, B. Civalieri, P. Rizzi, A. Castellero, C. Nervi, R. Gobetto, M. Baricco
 Dipartimento di Chimica and NIS, Università di Torino, Torino
- 9.20-9.45 **Amelia MONTONE** – ENEA, C.R. Casaccia
“Kinetic and microstructural evolution during H₂ cycling of MgH₂ nanocomposites”
 A. Montone, A. Aurora, V. Contini, D. Mirabile Gattia, M. Vittori Antisari
 Material Technology Unit, ENEA, C.R. Casaccia, Roma
- 9.45-10.10 **Luca PASQUINI** – Università di Bologna
“Hydrogen Storage and Structural Stability in Magnesium-based Nanoparticles”
 L. Pasquini¹, A. Montone², M. Vittori Antisari², E. Bonetti¹
¹Dipartimento di Fisica, Università di Bologna, Bologna
²Material Technology Unit, ENEA, C.R. Casaccia, Roma
- 10.10-10.35 **Riccardo CHECCHETTO** – Università di Trento
“Vacancy-like defects and transition metal additives in magnesium: their evolution after successive H₂ sorption cycles and influence on the H₂ desorption kinetics”
 R. Checchetto, A. Miotello
 Dipartimento di Fisica, Università di Trento, Trento
- 10.35-11.00 **Eugenio PINATEL** – Università di Torino
“Thermodynamic modelling of LaNi_{5-x}Al_x-H system”
 E.R. Pinatel¹, M. Palumbo², P. Rizzi¹, F. Massimino¹, M. Baricco¹
¹Dipartimento di Chimica and NIS, Università di Torino - Torino
²ICAMS, Ruhr University, Bochum, Germany
- 11.00-11.20 **Coffee break**
- 11.20-11.45 **Marco ZOPPI** – ISC-CNR, Sesto Fiorentino
“Diagnostic techniques on high capacity hydrides using vibrational spectroscopies”
 M. Zoppi, M. Celli, D. Colognesi, L. Ulivi
 CNR, Istituto dei Sistemi Complessi, Sesto Fiorentino, Firenze

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- 11.45-12.10 **Rosario CANTELLI** – Università di Roma “La Sapienza”
“The atomistic mechanisms underlying the hydrogen motion and decomposition reactions in hydrides, by anelastic spectroscopy”
 R. Cantelli¹, F. Leardini¹, A. Paolone², O. Palumbo²
¹Dipartimento di Fisica, Università di Roma “La Sapienza”, Roma
²CNR, Istituto dei Sistemi Complessi, Roma
- 12.10-12.35 **Giovanni CAPURSO** – Università di Padova
“New results on nanosized mixed Li and Mg borohydrides for hydrogen storage”
 G. Capurso, S. Lo Russo, A. Maddalena, G. Principi
 Dipartimento di Ingegneria Meccanica, Università di Padova, Padova
- 12.35-13.00 **Bartolomeo CIVALLERI** – Università di Torino
“Ab-initio modelling of metal borohydrides”
 B. Civalleri, E. Albanese, M. Corno, P. Ugliengo, M. Baricco
 Dipartimento di Chimica and NIS, Università di Torino, Torino
- 13.00-14.30 **Lunch**
- 14.30-14.55 **Gabriele MULAS** – Università di Sassari
“Sorption properties of nanosized hydrides confined into highly ordered mesoporous matrixes”
 S. Garroni¹, F. Peru¹, S. Soru¹, R. Campesi², E. Napolitano², C. Milanese³, M.D. Barò⁴, S. Enzo¹, G. Mulas¹
¹Dipartimento di Chimica e Farmacia, Università di Sassari, Sassari
²JRC-IE, Petten, The Netherlands
³Pavia H2 Lab, C.S.G.I. & Dipartimento di Chimica, Università di Pavia, Pavia
⁴Departament de Física, Universitat Autònoma de Barcelona, Bellaterra, Spain
- 14.55-15.20 **Jenny VITILLO** – Università di Torino
“Role of additives in hydrogen sorption on LiNH₂-MgH₂ system”
 J.G. Vitillo¹, J. Hu², F. Dolci³, A. Masala¹, S. Bordiga¹, M. Fichtner², M. Baricco¹
¹Dipartimento di Chimica and NIS, Università di Torino, Torino
²Karlsruhe Institute of Technology, Karlsruhe, Germany
³JRC-IE, Petten, The Netherlands
- 15.20-15.45 **Chiara MILANESE** – Università di Pavia
“Physico-chemical properties and sorption behaviour of the catalysed LiBH₄ - MgH₂ reactive hydride composite”
 C. Milanese¹, J. Jepsen², A. Girella¹, S. Garroni³, J.M. Bellosta von Colbe², G. Mulas³, M. Dornheim², T. Klassen², A. Marini¹
¹Pavia H2 Lab, C.S.G.I. & Dipartimento di Chimica, Università di Pavia, Pavia
²HZG, Geestacht, Germany
³Dipartimento di Chimica e Farmacia, Università di Sassari, Sassari
- 15.45-16.10 **Michele CATTI** – Università di Milano Bicocca
“Thermodynamics of dehydrogenation of LiBH₄/Mg₂FeH₆ assemblages”
 M. Ghaani, M. Catti
 Dipartimento di Scienza dei Materiali, Università di Milano Bicocca, Milano
- 16.10-16.30 **Marcello BARICCO** – Università di Torino
“Hydrogen Storage activities in Europe and Italy: running projects and future opportunities”
 M. Baricco
 Dipartimento di Chimica and NIS, Università di Torino, Torino
- 16.30-16.45 **Conclusions**

Organizers: **P.Rizzi, M.Baricco**
 Dipartimento di Chimica and NIS, Università di Torino, Torino

INFORMATION

Registration

The participation to the NIS Colloquium is free. Participants are requested to register by **February 10th, 2013** sending an e-mail to paola.rizzi@unito.it indicating:

Name, Surname, Institution and e.mail address.

How to reach us

· *Bus routes in the neighborhood of our department*

The main bus lines in the neighborhood of Chemistry department are: 1, 9, 16, 18, 34, 35, 45 and 67.

· *From Torino Caselle airport to Turin city center*

Turin's airport, Caselle Aeroporto Internazionale di Torino, is 16 km (10 miles) north of Turin's city center.

· Taxi. The taxi rank is located on the left at the exit of the Arrivals level. The approximate cost of a taxi to the city center is 40 euros.

· Rail Service. The railway station is located very near the air terminal. Rail service between the air terminal and GTT Dora Station in northwestern Turin takes 19 minutes. Departures are every 30 minutes to Turin from 06:49 am to 09:19 pm and back to the airport from 05:13 am to 07:43 pm. From Dora Station you can take a GTT bus to reach your destination in Turin

· Bus Service. Bus service between downtown and the Turin airport has several stops enroute to the Porta Nuova main railway station including Porta Susa railway station. The bus leaves and arrives at Porta Nuova at the corner of Corso Vittorio Emanuele II and Via Sacchi. From the airport, the bus leaves on the arrivals level just in front of the exit. Bus service between the air terminal and Porta Nuova Station (city center) takes 35-40 minutes.

· *From Porta Susa rail station to our department*

By public transport (+500 m/5 min walking). Take the metro, direction Lingotto, and get off at Nizza stop. Walk back on via Nizza for one block (direction north) and then turn right in Corso Raffaello. Go straight on almost till the end of the street.

· *From Porta Nuova rail station to our department*

· By public transport. Bus n° 9. Take bus number 9 just in front of Porta Nuova station direction "Torino Esposizioni" (do not cross the road). Get off at the last stop and go back along "corso Raffaello" for one block of houses. Metro (+500 m / 5 min walking). Take the metro, direction Lingotto, and get off at the 2nd stop (Nizza). Walk back on via Nizza for one block (direction north) and then turn right in Corso Raffaello. Go straight on almost till the end of the street.

· By foot (1,6 km 20 min). Walk along via Nizza for 1 km, then turn left in corso Raffaello. Go straight on till the last block of houses.

File repository

A copy of the slides presented by speakers will be available at NIS web site: www.nis.unito.it.