

Gordon Conference Focused on Combinatorial and High-Throughput Materials Science

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The third Gordon Conference on Combinatorial and High-Throughput Materials Science was held August 14–19, 2005, at the Queen's College, Oxford, United Kingdom. Conference chairs Wilhelm Maier (University of Saarlands, Germany) and James Cawse (GE Global Research, USA) assembled a program covering the theory and practice of high-throughput experimentation in materials science. The program had nine sessions,

comprising 20 talks and 40 posters delivered to 86 attendees. As always in Gordon Conferences, discussions were informal and unpublished. This is a long-standing policy designed to encourage frank and open discussion, particularly among industrial participants. The meeting was unusually international, with attendees from 13 different countries.

The conference opened with talks on “Directed Evolution of Enantioselective

Enzymes” by Manfred T. Reetz (Max-Planck-Institut, Germany) and “RNA-Mediated Evolution and Synthesis of Metal Oxide Nanoparticles” by Bruce Eaton (North Carolina State Univ., USA). Both speakers demonstrated innovative ways in which materials can be modified by use of biological systems that can be evolved with externally imposed selection pressure.

The storage, manipulation, visualization, archiving, and mining of the large amounts of data generated by high-throughput experimentation was a theme prevalent throughout the meeting. Presentations by M. Lippmaa (Univ. of Tokyo, Japan) on data storage formats, D. Farrusseng (CNRS, France) on the development of descriptors for solid catalysts, and F. Hamprecht (Univ. of Heidelberg, Germany) on analysis of spectral images gave the academic view, while J. Holmgren (Univ. of Pennsylvania, USA), T. Brinz (Bosch, Germany), and V. Adamian and K. Allen (BP, UK) discussed industrial experiences.

Examples for discovery of new knowledge as well as of new materials were presented by many speakers, especially S. Woo (KAIST, Korea) in a talk on ferroelectric materials, K.-S. Sohn (Sunchon, Korea) on new phosphors, and M. Bradley (Univ. of Edinburgh, UK) on polymers. Hydrogen storage materials (C. Olk, GM, USA) as well as nanomechanical properties screening (O. Warren, Hysitron, USA) were discussed.

Sessions on homogeneous catalysis (O. Lavastre, Univ. of Rennes, France; A. Berkessel, Univ. of Cologne, Germany) and heterogeneous catalysis (P. Jacobs and J. Paul, KU Belgium; P. Claus, Univ. of Darmstadt, Germany) related the latest in high-throughput methods and results in the catalysis arena.

The Gordon Conference was sponsored by ExxonMobil, BASF, HTE, Symyx, Umicore, Bosch, the University of Pennsylvania, General Electric, Dow, the Dutch Polymer Institute, and the Combinatorial Science & Materials Informatics Collaboratory. The National Science Foundation provided financial support for student registration fees and travel.

JAMES N. CAWSE
Co-Chair, Gordon Conference



(a) Conference co-chair Wilhelm Maier of University of Saarlands, Germany (right) and keynote speaker Manfred T. Reetz of Max-Planck-Institut, Germany, relax in the cloister at the Queen's College, Oxford. (Courtesy of James N. Cawse.) (b) Conference participants at lunch in the dining hall at the Queen's College. (Courtesy of Wilhelm Maier.) (c) Conference participants at a demonstration of change ringing (a uniquely English “combinatorial” art form). (Courtesy of James N. Cawse.)

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