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INVITATION TO THE LECTURE

Prof. Jens K. Nørskov
Center for Atomic-scale Materials Physics
Technical University of Denmark
Kongens Lyngby, Denmark

Thursday, November 18th 2004 at 1 p.m.
in Lecture Hall at the National Institute of Chemistry
Hajdrihova 19, Ljubljana

Catalytic and enzymatic hydrogen production

Prof. Nørskov will present the possibility of using molecular hydrogen as a fuel that focuses attention on the way it is produced. Methods include catalytic conversion of hydrocarbons and electrochemical or photochemical water splitting. Certain enzymes, hydrogenases and nitrogenases, can also evolve hydrogen. Electronic structure calculations offer the possibility of understanding in detail the different processes. It will be shown that at the atomistic level the inorganic and biological catalysts work in quite similar ways. The calculations show how nature has found ways of avoiding Pt as the catalyst for hydrogen evolution, and how to design inorganic analogues of the active sites in the enzymes.