Switchable Mirrors

Thomas F. Rosenbaum, University of Chicago, DMR-0114798

(a) (b) (c)

A shiny mirror is transformed into a transparent window simply by filling a cell with hydrogen gas. At low temperatures, a laser can be used to the same effect, revealing the way quantum mechanics controls the ability of electrons to propagate from one end to the other of a metal hydride film, conducting heat, carrying electricity, and reflecting light.

"Scaling at the Mott-Hubbard Metal-Insulator Transition in Yttrium Hydride," A.F.Th. Hoekstra, A.S. Roy and T.F. Rosenbaum, J. Phys.: Condens. Matter **15**, 1405 (2003).

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S.T.O.M.P.
Science & Technology Outreach
and Mentoring Program

We have developed a program at the University of Chicago's Charter School on the South Side to:

* augment inquiry-based science opportunities available to K-8 students
* provide teachers with opportunities to observe and participate in laboratory research
* use UofC faculty and students as science resources and role models

The program consists of:
* *Science Sprees* Outings to University science labs and medical facilities for students and teachers alike
* *Ask-A-Scientist* A telementor program linking seventh graders by emqil to UofC undergraduates and graduate students
* *Science Club* After-school activities for K-3 and 4-8 directed by graduate students and integrated into the Charter School's curriculum development

Picture: Journal writing at the North Kenwood/Oakland Charter School Science Club, 4th through 8th graders