

Castle tours UD physics lab, learns about advanced magnets (UDAILY)

Prof. Hadjipanayis (left) discusses the establishment of a Center for Advanced Magnets at UD with Congressman Castle.

4:17 p.m., Aug. 12, 2008--U.S. Rep. Michael N. Castle (R-Del.) toured the University of Delaware's physics and astronomy department laboratory and received a presentation on the economic importance of developing more powerful magnets during a visit on Aug. 7.

George Hadjipanayis, Robert B. Murray Professor of Physics and chairperson of the Department of Physics and Astronomy, said new energy technology is becoming increasingly dependent on powerful magnets, which play a significant part in hybrid cars and the generation of wind power.

"The stronger the magnet, the smaller the volume needs to be," Hadjipanayis said. "In the era we live, in which everything is miniaturized, the strength of the magnet is very, very important."

Hadjipanayis proposed the establishment of a Center for Advanced Magnets at UD at an annual cost of \$1.5 million. The center would aim to improve the competitiveness of U.S. magnet technology, which is crucial for the future energy needs of the country.

Hadjipanayis said China, which has huge reserves of rare earth raw materials and enjoys low production costs, dominates the magnet industry around the world, a position that the United States held in the 1970s.

Hadjipanayis said that to avoid becoming totally dependent on China for magnets the U.S. must develop or discover the next generation of magnets by further developing techniques that have been proven in theory.

"This is a very challenging task. It is not very easy. Nobody has succeeded yet," Hadjipanayis said. "[But] whoever comes first in this is going to lead the next generation of production."

In response to a question by Castle about the availability of the raw materials in the U.S., Peter Dent, vice president of business development at Electron Energy Corp. in Landisville, Pa., which partners with UD to develop stronger magnets, said that the last remaining source of materials, the Mountain Pass rare earth element mine in California, was shut down because the cost of production was much higher than material from China.

After touring the laboratory, Castle said the U.S. must stay on top of magnet technology, which he described as "extraordinarily important." He said the tour and presentation were a useful learning experience that will be helpful to him when dealing with funding.

Article by Martin Mbugua