Mr. Magnet Invites Students to Discover Plasma

MIT's Mr. Magnet brings plasma education to Orlando high school as part of APS-DPP educational outreach events

Living on a planet where we are surrounded mainly by matter in the familiar states of solid, liquid and gas, many of us are not aware of a fourth state of matter – plasma. On November 13, students at Orlando's University High School will learn more about this fascinating and puzzling mixture of ions and electrons when Paul Thomas from the Massachusetts Institute of Technology (MIT), presents at their school his popular hands-on science lecture about plasma and spectroscopy.

Until recently plasma was rarely mentioned in high school textbooks, though matter in the plasma state makes up 99% of the visible universe. Our sun, stars, northern lights, solar flares, lightning bolts are all examples of naturally occurring plasmas. Man-made plasmas are used for lighting (fluorescent lights), sterilizing medical equipment, welding, manufacturing computer chips, fusion energy research and even surgery.

University High School students participating in Thomas's assembly program will use special equipment to create a gaseous glow discharge plasma, allowing them to observe how magnetic fields affect it. They will also use spectrographic techniques to record the unique spectral fingerprints of each gas as it is transformed into the plasma state. In addition, Paul Thomas will focus their attention on meaningful careers in science and engineering, emphasizing that women as well as men can make an impact through scientific exploration.

Paul Thomas is a technical supervisor at the MIT Plasma Science and Fusion Center. As "Mr. Magnet," Paul travels each year to elementary and middle schools in the New England region, bringing with him a truckload of entertaining and educational experiments. He is in Orlando to participate in

Paul Thomas (right) is bringing the same plasma education equipment to Orlando that he typically shares with Massachusetts high schools and MIT graduate students. Photo by Paul Rivenberg

educational events being hosted by the American Physical Society - Division of Plasma Physics (APS-DPP) during their annual meeting (November 11-15).

During this week, the APS-DPP is presenting workshops for teachers ("Teachers Day" - November 12), and a two-day "Plasma Sciences Expo" to introduce students, teachers and the Orlando community to plasma science and the benefits of plasma research. At the Expo, plasma laboratories and industries from around the world will provide hands-on experiences with plasmas and related science. High Schools and Middle Schools around Orlando have been invited to participate in these activities at the Rosen Centre Hotel on November 14 and 15, 8:30 AM - 2:00 PM. The general public is encouraged to attend a special evening Expo on Thursday, November 14, 6:30 - 8:30 PM, free-of-charge. Mr. Magnet will be on hand, encouraging all to discover plasma.