

News

Graphene Boosts Efficiency of Next-Gen Solar Cells

by Marcia Goodrich, magazine editor

The coolest new nanomaterial of the 21st century could boost the efficiency of the next generation of solar panels, a team of materials scientists has discovered.

Graphene, a two-dimensional honeycomb of carbon atoms, is a rising star in the materials community for its radical properties. One of those properties is electrical conductivity, which could make it a key ingredient in the next generation of photovoltaic cells, says Professor Yun Hang Hu (MSE).

The full release is available here: [Nanomaterial](#).

Houghton Becomes First in UP with Public Electric Vehicle Charging

Electric vehicle (EV) owners can now charge their cars at a public charging station in downtown Houghton on the parking deck, thanks in part to Michigan Tech students.

With support from General Motors, Upper Peninsula Power Company, and the City of Houghton, they have partnered to install the first EV charging station in the UP available for public use.

The new station will be unveiled for public use at 4 p.m., today, at 5th & Elm Coffee House, 326 Shelden Ave.

General Motors has a long history of working with Michigan Tech on student projects related to emerging industry and society issues. This year, GM sponsored several groups of Michigan Tech students to look at some of the charging infrastructure challenges associated with the ongoing emergence of electrified transportation.

One of those current challenges is the availability of public EV charging. While most EV owners are likely to charge their vehicles at home, the limited battery capacity, and therefore range, of most current EVs makes public charging an essential element for widespread EV adoption. It is a classic chicken or egg dilemma. Without large numbers of EVs in service, public charging will not be extensively used. But the lack of a visible network of public charging is perceived as a possible limiting factor in an EV purchase.

Student teams in the Automotive Computing Enterprise, Transportation Enterprise, Civil Engineering Senior Design, and the School of Business looked at the many issues associated with public EV charging. Students grappled with many of the technical and business issues of public charging, including predicting how many stations will be needed, the best locations and a viable business model to pay for the infrastructure as well as the electricity used.

Initially, the Houghton station will offer free charging courtesy of 5th & Elm Coffee House. Frank Fiala, the owner, believes it will help attract people to downtown, a viewpoint shared by the City of Houghton. UPPCO plays a leadership role by supporting, encouraging and enabling this new technology, as the company strives to provide the transportation fuel of the future.

For more information, contact Associate Professor George Dewey (CEE) at 487-2522 or at gdewey@mtu.edu

Entertainment and Enrichment

Save the Date: Retirement for Bill Rose

The geological and mining engineering and sciences department invites everyone to the retirement party honoring Professor Bill Rose from 3 to 5 p.m., Friday, May 4, on the rooftop of the Dow, ninth-floor entrance. The Dow sixth-floor atrium has been reserved in case of inclement weather. Food and spirits will be available. We hope to see you there.

Regular Features

Job Postings

Staff job descriptions are available in Human Resources or at <http://www.admin.mtu.edu/hro/postings> . For more information regarding staff positions, call 487-2280 or email jobs@mtu.edu .

Faculty job descriptions can be found at www.admin.mtu.edu/hro/facpers/facvac.htm . For more information regarding faculty positions, contact the academic department in which the position is posted.

Administrator of Services

School of Forest Resources and Environmental Science

Internal posting only

Apply using new online system at <http://jobs.mtu.edu>

Staff Associate

MTTI/Center for Technology and Training

Apply using new online system at <http://jobs.mtu.edu>

Media Specialist and Alumni Liaison

School of Forest Resources and Environmental Science

Apply online at <http://jobs.mtu.edu>

Please note: Human Resources is transitioning to an online application process for the job postings above. To read the notice to applicants, see Posting.

Michigan Technological University is an equal opportunity educational institution/equal opportunity employer.

Notables

Taile Leswifi, a graduate student from South Africa, has been named a winner of an American Association of University Women (AAUW) international fellowship.

The prestigious fellowship is highly competitive. International fellowships are awarded for full-time study or research to women who are not US citizens or permanent residents. Recipients are selected for academic achievement and demonstrated commitment to women and girls. The overwhelming majority return to their home countries to become leaders in government, academia, community activism, the arts and science.

Studying environmental engineering at Michigan Tech, Leswifi is researching new ways to produce a sustainable, renewable, low-cost source of hydrogen energy from water and sunlight--energy that does not add to the pollution of the environment. She is also preparing herself to teach at Tshwane University of Technology in South Africa, where she plans to work with a South African Fulbright group to take the

promise of success through education to children in remote reaches of her country.

"In a graduate school filled with interesting and hard-working students, Taile Leswifi stands out as a leader," said Jacqueline Huntoon, dean of the Graduate School. "While she has been active in promoting civic-mindedness on campus, her dedication doesn't stop there--she can often be seen volunteering time and talent for community programs. Whether on or off campus, her passion for research, global stewardship and education is beyond impressive--it is inspirational. Taile Leswifi is a strong female role model who will undoubtedly return to South Africa and be a leader in shaping new initiatives in academia, community activism and science."

Proposals in Progress

Professor David Hand (CEE) and Professor Michael Roggmann (ECE), "Revolutionizing Design of Photocatalytic Water-splitting Using Nanostructured Solid Solution Photocatalysts through Hydrogen Production Under Visible Light," NSF

Assistant Professor Desheng Meng (ME-EM/MuSTI), "GOALI: Self-adaptive Thermal Management for Electrochemical Energy Devices," NSF

Assistant Professor Louisa Raisbeck (KIP), student Bridget Durocher (KIP) and Manager Jada Gullstrand (SPORE), "THE ELEETS--Exceptional Learning Experience in Exercise and Training for Sports," Keweenaw Community Foundation

Associate Professor Yun Hang Hu (MSE/IMP), "Non-stoichiometric Lithium Imides and Exploration of Their Performance for Hydrogen Storage," NSF

Associate Professor Adrienne Minerick (ChE/BRC), "Collaborative Research: Exploration and Quantification of Surface and Bulk Ion Gradients in a Dielectrophoretic Microdevice," NSF

In Print

The images and an article from Physics Professor Yoke Khin Yap's research group was published in the Applied Physics Letters (APL). The pictures were selected for the cover of the APL 50th anniversary celebration website. The article, "Formation of Single Crystalline ZnO Nanotubes without Catalysts and Templates," was the most read article in March 2007.

Recent work on in-situ probing of individual boron nitride nanotubes by scanning tunneling microscopy inside a transmission electron microscopy system is being featured in NanotechWeb. The research is conducted by Yap and colleagues, including Seyyed Hessam Mir Shah Ghassemi (ME, 2011) and Chee Huei Lee (Physics, 2010).

For details, see Physics.