

SUDBURY-DESIGNED SOLAR POWER SYSTEM TO HAVE MAJOR FIELD TEST

Photo-voltaic cells to provide clean energy will be deployed off Maltese coast

SUDBURY, ON (AUGUST 19, 2014) – An innovative and energy-smart concept to harness clean solar power for multiple applications will have its first major field test in the Mediterranean sea, off the island of Malta, early in 2015. Conceived and developed by researchers at MIRARCO and Laurentian University in Sudbury, the demonstration project is being supported by the Government of Malta, the Malta College of Arts, Science and Technology, and other research partners.

The Offshore Passive Photo-voltaic (OPPV) Project will use thin solar panels (photo-voltaic cells) floating on the water's surface to generate energy. The array of panels, measuring about 20 meters by 20 meters, is expected to have a peak output of 8kW, enough power for two typical 3-bedroom homes.

“The goal of the demonstration project is to find alternative ways for Malta to generate clean energy, since it is a small island and doesn't have the land space to install solar panels on the ground,” says MIRARCO researcher Kim Trapani. “We believe our system is a substantial improvement on other forms of marine renewable energy, such as offshore wind, rigid offshore photo-voltaic structures, wave and tidal energy. The floating PV panels do not pose a collision risk, and should require very low maintenance.”

Originally from Malta, Dr. Trapani completed her Ph.D. at Laurentian University with thesis advisor Dr. Dean Millar, Professor in the Bharti School of Engineering and the MIRARCO Research Chair of Energy in Mining. Dr. Millar is particularly interested in the potential applications of the OPPV project in mining.

“Wherever they are located, mines tend to consume appreciable amounts of energy to support mineral production,” said Dr. Millar. “The Maltese demonstration project is a world first that aims to prove thin-film PV technology in the saltwater marine environment, but it has also been developed as an electricity generating system for mines.” The flexible laminated panels will float on the surface of the water of tailings ponds, said Dr. Millar. “The panels could form a barrier to isolate wildlife from the tailings waters, while the panels generate electricity for the mine.”

Drs Trapani and Millar have published research suggesting that for remote mines like the Ring of Fire, the cost per kilowatt-hour produced with the PV systems is lower than the cost of installing and running diesel-powered generators. “Our OPPV technology could have game-changing implications for the mining industry, especially with remote minesites, by providing clean and cheap energy that can be set up where needed with relatively little infrastructure. These demonstration projects aim to prove longer term reliability,” said Dr. Millar.

About Laurentian University

Laurentian University offers an outstanding university experience in English and French, with a comprehensive approach to Indigenous education. Laurentian University prepares students as agents of change and empowers them to create innovative responses to local and global challenges. Laurentian's students benefit from small class sizes and exceptional post-graduation employment rates. With nine Canada Research Chairs and nineteen research centres, Laurentian is a recognized leader in its specialized areas of research strength, which include mining innovation and exploration, stressed watershed systems, particle astrophysics and rural and northern children's health. Laurentian University has secured over \$100 million in research income in the past five years.

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About MIRARCO

MIRARCO (Mining Innovation Research and Applied Research Corporation) is the largest not-for-profit applied research firm in North America. MIRARCO's mission is to develop the people and tools needed to plan and design the underground mines and related facilities of the future, with expertise in geomechanics; visualization & optimization; and environmental stewardship & sustainability. The Energy, Renewables and Carbon Management (ERCM) group at MIRARCO is dedicated to excellence in energy research for industry, public sector and community or municipal interests, with the mining industry being its principal area of focus. ERCM aims to innovate in energy management, energy conservation and energy technology to lower the cost of energy supplied for all stakeholders as well as added value in sustainability metrics for clients.

For more information on Laurentian University visit www.mirarco.org

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