

Low-cost solar project has sky-high potential

BY ERIC MCGUINNESS

Millions of tiny wires – each 1,000 times finer than a human hair – may soon make solar power cheaper and more attractive.

McMaster University, Cleanfield Energy of Ancaster and the Ontario Centres of Excellence are partnering to turn laboratory research into commercial solar cells, which trap sunlight and turn it into electricity more efficiently than anything now on the market.

Ray LaPierre, assistant professor in the department of engineering physics, said there are only a handful of other research groups in the world working on nanowire technology for solar energy, and McMaster's is the only one in Canada.

GE Global Research in the United States recently demonstrated a low-cost, nano-based solar cell using silicon wires.

LaPierre is working with wires made of gallium arsenide, which he says have the potential to be even more efficient.

Gallium arsenide has been used for nanowires produced on gallium arsenide surfaces, a costly combination so far limited largely to use in space.

But LaPierre says he can grow them on cheaper silicon.

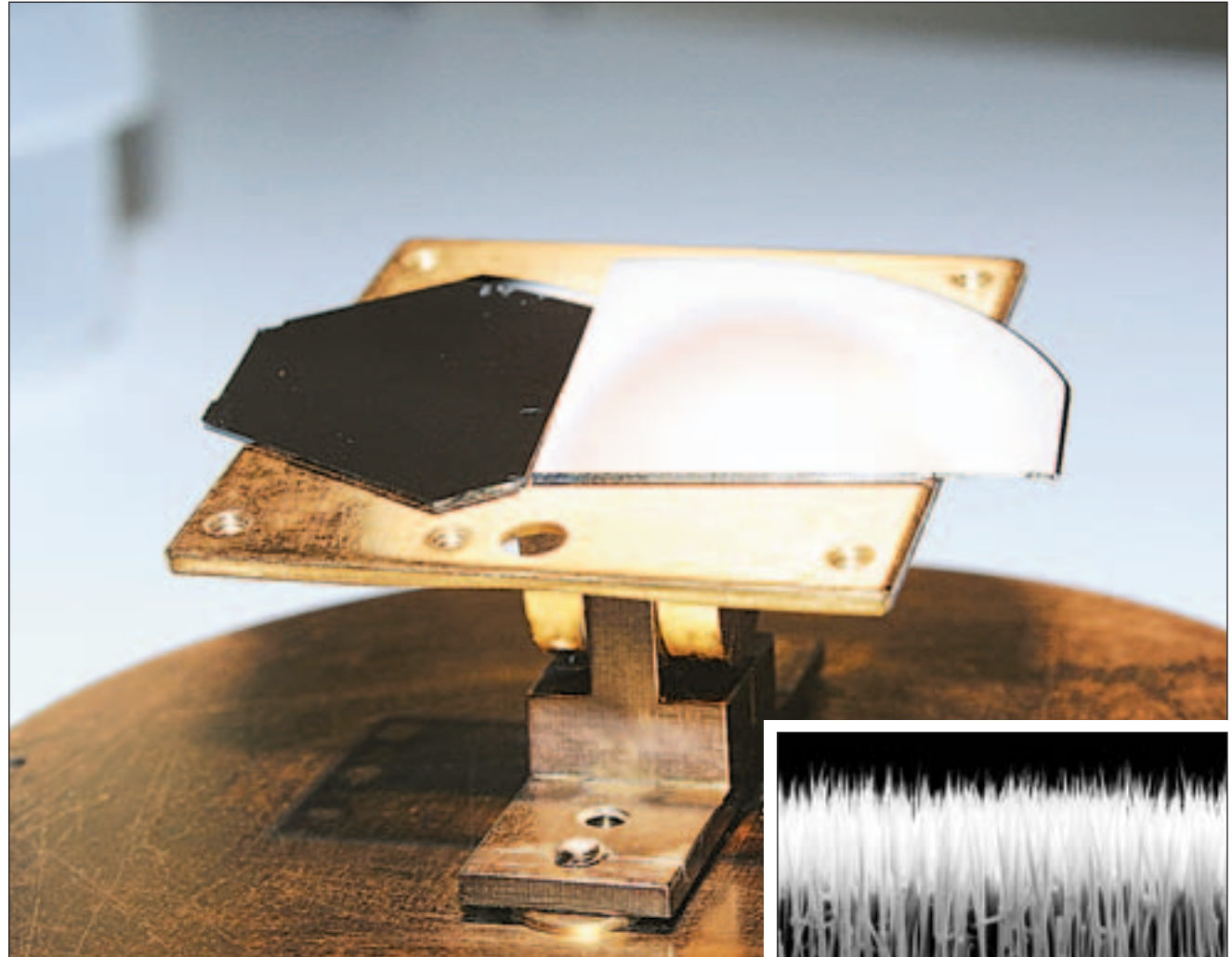
Cleanfield president Tony Verrelli said his company, which is selling wind turbines developed with the help of McMaster, has been looking for an opportunity to expand into solar energy partly because his company has the electronic technology to capture either solar or wind power and feed it into the electrical grid.

In what Verrelli called a case of “perfect timing,” he said he met LaPierre when both spoke recently at a meeting of the Golden Horseshoe Venture Forum held at the Hamilton Chamber of Commerce.

As a result, Cleanfield is investing \$300,000 in the three-year initiative, with the Ontario Centres of Excellence chipping in \$279,000. McMaster, which is providing the researchers and facilities, will use the money to add a post-doctoral fellow and PhD and Master's students to the research team, and for materials and supplies.

Ontario Centres of Excellence Inc. describes its role as driving commercialization of cutting-edge research.

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Nanowires grown on bare semiconductor, right, produce a strong light absorber that appears black, on the left side.

