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Solar awnings reach beyond the rooftop

By Lee van der Voo

Sustainable Business Oregon

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A new solar awning that generates power and light is among a handful of ideas being tested at a new facility at the University of Oregon.

It's also helping the university envision a future of increasingly close partnerships with business, a vision likely to foster an important role for UO in the research and development of ecologically friendly building products.

eSolar Awning was developed by [Ihab Elzeyadi](#), an associate professor of sustainable architecture and director of the university's High Performance Environments Lab.

The modular system is made up of conventional photovoltaic cells and shading, but its assembly is unique. It attaches to a building's exterior, providing shade to windows while reflecting light back inside. For more than a year, Elzeyadi and his colleagues have been testing the awning's performance on the side of a university building, measuring its power generation capacity and the panels' effect on indoor factors like light and temperature.

The awning's commercial potential now appears obvious. It generates about six or eight times the energy it takes to light the building and lowers temperatures inside, reducing stress on cooling facilities. Details of its performance are all carefully recorded at <http://solarawning.uoregon.edu>

But bringing the product from the university to a commercial market is a challenge.

The conundrum for scientists and entrepreneurs is familiar, particularly in the sustainable technology and building industry: there is much uncharted territory between the scientific research that provides innovative new materials and the commercialization of those ideas into products. [Oregon BEST](#), a state initiative charged with spurring sustainable technology and building products, recently launched a grant program to help bridge the gap.

But Elzeyadi and the university of Oregon envision another possibility for the eSolar Awning. Spying commercial potential in the product and in numerous other materials being tested at the lab, they believe a corporation representing UO and the laboratory, along with a commercial partner to manufacture products could lie ahead.

"There's a potential to have a company that would really specialize in these exterior treatments for the building and the building facades," Elzeyadi said. He added that other avenues to market have been explored.

"It will take a little bit of two sides coming up with enough people who are interested to draft and design what that company would look like as an R&D company that would be tied to full scale production, and the university becomes part of that," he said.

Elzeyadi said it's not yet clear what scale of production would make the eSolar Awning profitable. Details of a

business plan are still ahead.

But one thing is clear: Elzeyadi and his UO colleagues clearly envision closer relations between UO and the commercial sector, and hope to play a central role in proving and disproving sustainable building materials as they come to market.

The idea is taking hold as Elzeyadi's lab begins a conversion into the Façade Innovation Technology Testing Facility, [made possible with funding from Oregon BEST](#), the university, grants and donations. Soon to be speckled with sensors, outlets, and a new scaffolding design, the building will eventually be actively testing other sorts of sun screens, windows, solar equipment and other building materials for commercial viability. Essentially, it will provide a facility to practice on, one outside of an arena of live construction, where the price for failing can be high.

While federal and private funding for innovation in sustainable building lags behind other sectors, Elzeyadi said there's clearly opportunity for the university and the Façade Innovation Technology Testing Facility to play a bigger role in fostering science.

Since few companies take big risks while building, Elzeyadi said, sustainable architecture remains "a little bit of a best practices model and not always is the best practice the scientific answer. Many times people have done that to save them money" or simply because it's been successfully done before.

But science can often produce better technologies for creating environments that make the people inside more healthy, comfortable and productive, he said. The Façade Innovation Technology Testing Facility is the first of its kind in the world.

As its creation gains traction, "we want to attract both ideas from researchers and attract companies and industries to test products there," Elzeyadi said.

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