

Custom circuit board printer invention wins International James Dyson Award

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The company currently operates out of Velocity, a startup incubator run by the University of Waterloo.

"The team behind Voltera are the latest in a growing line of successful innovators to emerge from this University's vibrant entrepreneurial environment," said Feridun Hamdullahpur, president and vice-chancellor of Waterloo. "Voltera have used the knowledge gained studying at Waterloo together with experience in co-op employment to create a truly innovative product and I am immensely proud of their achievements."

While studying mechatronics engineering, Almeida, Zozaya, and Pickard became frustrated by the inefficiency of designing circuit boards. Teaming up with Ilic, who was studying nanotechnology engineering, the students spent two years improving the electrical properties of the conductive nano-silver ink, producing a compact electromechanical system to dispense the thick ink and developing a software algorithm to control it precisely.

The end result—the Voltera V-One printer—was named one of the top 10 innovations for 2015 by Popular Science. It also has been recognized

as the 2015 TechCrunch Disrupt (Hardware Battlefield) Champion and this year's Make Magazine Editor's Choice.

After graduation in 2013, the team members moved Voltera into the Velocity Garage and later, the Velocity Foundry, the hardware arm of Waterloo's successful incubator.

"We're lucky to have been encouraged and supported by the University of Waterloo. As a startup, the university's name has opened doors for us on a worldwide stage," said Jesús Zozaya. "We receive guidance from Velocity mentors on a daily basis and regardless of the problem, they always find a way to put things into perspective and make the next steps clear. As students, we had the opportunity to experience different industries through the co-op program, and as employers, we have a constant supply of high quality students that have proven invaluable to the development of the Voltera V-One."

Voltera is the first Canadian project to capture the prestigious Dyson award that comes with a prize of about \$54,000 (CAD) for the team members and \$9,000 for the University's Faculty of Engineering.

"The Voltera V-One printer pushes the boundaries of innovation," said Pearl Sullivan, dean of Waterloo Engineering. "It is an excellent example of what our students are capable of when they graduate from Waterloo Engineering. They took a very complex problem and came up with an elegant solution that would change customized circuit printing forever. The future of technology innovation in Canada lies within brilliant teams like Voltera."

The James Dyson Award, launched by the James Dyson Foundation in 2007, is an international student design challenge open to university level students and recent graduates in the fields of product design, industrial design and engineering with the objective to design something that

solves a problem.

Last year Suncayr, a Waterloo nanotechnology engineering student startup, was the first runner up in the International James Dyson Award competition. Suncayr invented an easy-to-use marker that indicates when sunscreen needs to be reapplied. Also started as a Waterloo Engineering Capstone Design Project, it is now part of the University's Velocity Foundry and Velocity Science startup programs.

More information: www.jamesdysonaward.org/project/ping-of-electronics/

Provided by University of Waterloo

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