

## Junior at High Technology High School Wins IEEE Presidents' Scholarship

The recipient developed a low-cost, high-efficiency photovoltaic system

By LYNDA BRADLEY 11 July 2018

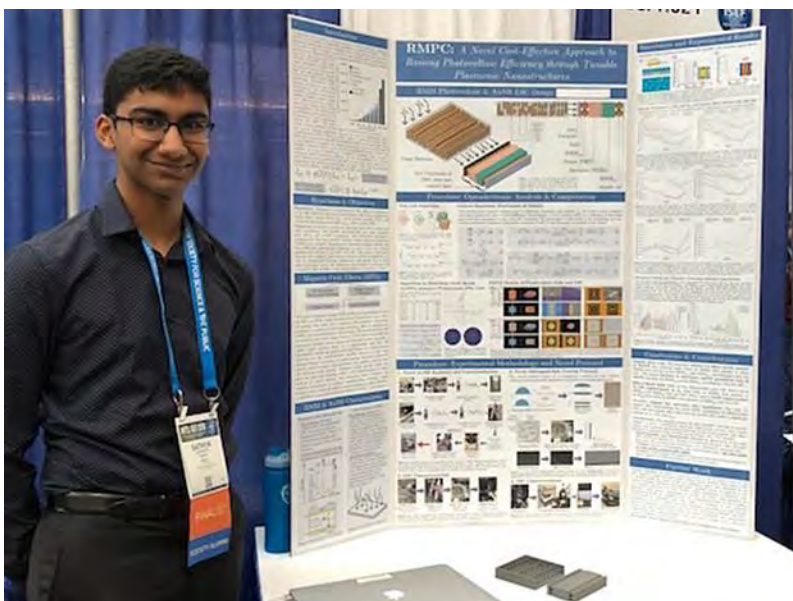


Photo: IEEE

Sathya Edamadaka [above], a junior at High Technology High School, in Lincroft, N.J., was awarded the 2018 **IEEE Presidents' Scholarship** (<https://www.ieee.org/education/preuniversity/scholarship.html>) during the annual Intel International Science and Engineering Fair (ISEF), held in May in Pittsburgh.

Edamadaka's project aims to improve the solar energy conversion process using a photovoltaic system designed with two tunable plasmonic nanostructures. His innovation significantly increases short-circuit current output and total current produced.

With an interest in both engineering and finance, Edamadaka says he hopes to start a cost-efficient business that expands energy-storage boundaries.

He will receive a US \$10,000 scholarship, payable over four years of undergraduate university study, as well as a complimentary IEEE student membership and a plaque.

This year marks the scholarship's 20th anniversary. Established by the **IEEE Foundation** (<https://www.ieeeefoundation.org/>) and administered by **IEEE Educational Activities** (<https://www.ieee.org/education/index.html>), the award recognizes one student each year for an outstanding project that demonstrates an understanding of an IEEE field of interest. Scholarship recipients are selected by a team of IEEE members and volunteers. The 2018 IEEE president-elect, José M.F. Moura, presented the award as well as the second- and third-place prizes.

**THE RUNNERS-UP**

In second place was Oliver Nicholls [right] from Barker College, in Sydney. He created a window-cleaning robot for commercial high-rises. The fully automated robot offers a cost-effective method of cleaning the windows that frees humans from having to perform the dangerous task.

Nicholls, whose father is an engineer, says he was inspired to create the robot after learning that a window cleaner had fallen while on the job.

"I love to tinker, and have always been interested in science and engineering," he says. "It seems to me like an easy way to make a real impact on the world. You can develop a product or a system that can change millions of lives."

For his innovation, Nicholls received a \$600 prize.

Third place went to Maximilian Du [right], a student at Fayetteville-Manlius High School, in Manlius, N.Y. His artificial intelligence system can monitor a sleeping infant to keep the baby from dying of sudden infant death syndrome. The device can sense when a baby is not breathing. In tests, the system was accurate more than 90 percent of the time in detecting sudden stops in breathing. Du received \$400.

The Intel ISEF is the world's largest preuniversity science and engineering fair. Each year approximately 1,800 high school students from more than 75 countries, regions, and territories attend to compete for scholarships, internships, and scientific field trips. The competition focuses on identifying, inspiring, and engaging the world's next STEM generation.

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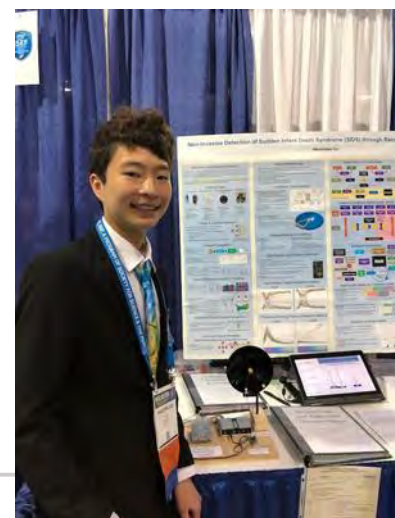


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Recipients have since launched startups and landed jobs at high-tech companies



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Teenager's system uses a cellphone and glove embedded with vibrating sensors

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