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## **Contest Winner Converts Carbon Emissions into a Clean Energy Resource Global Design Competition Draws over 1,150 Innovative Product Ideas**

New York, NY – Aiming to reduce global CO<sub>2</sub> emissions, a research team from Cornell University and Dimensional Energy (Ithaca, NY) have invented a way to cost-efficiently convert waste carbon dioxide into valuable, clean liquid fuel. Their “HI-LIGHT” Solar Thermal Chemical Reactor, which uses proprietary nanotechnology in a process that mimics plant photosynthesis, has been awarded a grand prize of \$20,000 in the 2017 "Create the Future" Design Contest.

HI-LIGHT was among 1,150 new product ideas submitted in the 15th annual design contest, which was established in 2002 to recognize and reward engineering innovations that benefit humanity, the environment, and the economy. This year’s contest was co-sponsored by COMSOL ([www.comsol.com](http://www.comsol.com)) and Mouser Electronics ([www.mouser.com](http://www.mouser.com)). Analog Devices and Intel were supporting sponsors.

“I would like to express our greatest gratitude to the judges for choosing our team as the Grand Prize Winner,” said team leader Elvis Cao, a Ph.D. Student at Cornell University. “This recognition is not for our team alone, but for the general science community to fight against climate change and push forward renewable energy research.”

“Whether it’s a start-up or Fortune 500 company, only bold design innovation can provide an atmosphere where individuals and businesses thrive,” said Bernt Nilsson, Senior VP of Marketing with COMSOL, Inc. “The Create the Future Design Contest is doing a tremendous job in promoting innovators and their ideas from around the world. COMSOL is delighted to sponsor the contest and continues to be inspired by the promising solutions to formidable challenges such as global environmental and health issues.”

“We would like to congratulate this year’s winners and thank all of the entrants for their participation,” said Kevin Hess, Mouser Electronics Senior Vice President of Marketing. “Part of our mission here at Mouser is fostering technical innovation so it’s a natural fit for us to support this global design contest that celebrates ingenuity. We are seeing exciting advancements in electronic design thanks to the

creative engineers and innovators across the globe, including those who entered the Create the Future Design Contest. ”

In addition to the grand prize of \$20,000, first-place winners were named in seven categories and received Hewlett-Packard workstation computers:

Aerospace & Defense sponsored by Zeus ([www.zeusinc.com](http://www.zeusinc.com))

**Airfoil Performance Monitor (APM)**

Patented technology provides real-time information to pilots regarding the state of the airflow over the aircraft’s wings and tail. This information is critical for the prevention of stalls and loss of control, especially during icing conditions.

**John Maris (Team Lead), Marinvent Corporation, Quebec, Canada**

Automotive/Transportation

**Heavy Duty Aftermarket Super Truck**

Advanced Under Hood Air System delivers a 10% fuel savings, while reducing heat and fan noise by 50%.

**Joshua Medling (Team Lead), Enviro-Cool, Sullivan, MO, USA**

Consumer Products

**Conformal Battery**

Novel battery integrates into the product structure, reducing weight while improving performance. It allows product designs to be based on end use and function – not battery shape.

**Megan Moore (Team Lead), Battelle, Columbus, OH, USA**

Electronics/Sensors/IoT

**Integrated Multi-Color Light Emitting Device Made with Hybrid Crystal Structure**

Integrated hybrid crystal LED display device that – for the first time – emits red, green, and blue colors on one single wafer, offering applications to the next generation of LED displays and televisions.

**Yeonjoon Park, National Institute of Aerospace (NIA), and Sang Choi, NASA Langley Research Center, Hampton, VA, USA**

Machinery/Automation/Robotics – sponsored by Maplesoft ([www.maplesoft.com](http://www.maplesoft.com))

**EJBot: Versatile Climbing Robot for Industrial Vessel Inspection**

A new propeller-type robot for climbing various types of structures and obstacles promises to improve safety and reduce the cost of inspecting industrial vessels.

**Mohamed Gouda Alkalla and Mohamed Fanni, Mansoura University, Mansoura, Ad-daqliyah, Egypt**

Medical – sponsored by Schneider Electric ([www.motion.schneider-electric.com](http://www.motion.schneider-electric.com))

**Arterial Everter**

A novel tool replaces traditional suturing and enables rapid anastomosis of arteries, dramatically reducing operating time.

**Jeffrey Plott (Team Lead), University of Michigan, Ann Arbor, MI, USA**

Sustainable Technologies

**Energy Saving Filter for Removal of Heavy Metals from Water**

Innovative water filtering technology uses a nanomaterial to attract heavy metal ions and is optimized for lowest cost, zero energy consumption, no water waste and high flow rate.

**Volodymyr Khranovskyy (Team Lead), Talent Molecule LDA, Braga, Portugal**

Finalists were selected by senior editors at Tech Briefs Media Group, producer of the contest, and judged by an independent panel of design engineers. For more information, visit [www.createthefuturecontest.com](http://www.createthefuturecontest.com).

### **About COMSOL**

COMSOL is a global provider of simulation software for product design and research to technical enterprises, research labs, and universities. Its COMSOL Multiphysics® product is an integrated software environment for creating physics-based models and simulation apps. A particular strength is its ability to account for coupled or multiphysics phenomena. Add-on products expand the simulation platform for electrical, mechanical, fluid flow, and chemical applications. Interfacing tools enable the integration of COMSOL Multiphysics® simulations with all major technical computing and CAD tools on the CAE market. Simulation experts rely on the COMSOL Server™ product to deploy apps to their design teams, manufacturing departments, test laboratories, and customers throughout the world. Founded in 1986, COMSOL employs more than 480 people in 21 offices worldwide and extends its reach with a network of distributors.

[www.comsol.com](http://www.comsol.com)

### **About Mouser Electronics**

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