



A+ B2B Copy

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This portfolio sample is of a newsletter rewritten to achieve greater clarity and audience reach. The aim was accomplish this while preserving all the original information. There was also minor research to clarify information those not so familiar with the specific technology involved might easily fail to grasp.

## Original Copy:

### **HyperSolar Team Develops Key Component to Reduce Cost of Producing Renewable Hydrogen**

Peer reviewed scientific journal describes the use of earth abundant material to reduce the overall cost of the hydrogen production photocathodes

SANTA BARBARA, CA – October 24, 2017 – HyperSolar, Inc. (OTCQB: HYSR), the developer of a breakthrough technology to produce renewable hydrogen using sunlight and any source of water, today announced it has successfully developed a key component made of earth-abundant material which will reduce the overall cost of its renewable hydrogen producing technology process.

HyperSolar’s research team at the University of Iowa published their results in *Advanced Science*, a peer-reviewed scientific journal that details news and breakthroughs within scientific disciplines including healthcare, materials science, sustainability, nanotechnology, energy, and electronics. The published paper highlights the scientific team’s successful solar hydrogen production using an earth-abundant hydrogen-producing photoactive electrode, made primarily of tin and sulfur.

To advance development and deployment of solar hydrogen production units, inexpensive light absorber materials that can be manufactured in large scale using scalable processes, are needed. The published work, led by Prof. Syed Mubeen, developed novel device design strategies to synthesize and stabilize SnS based semiconductors for hydrogen production. These solar hydrogen production units were fabricated using scalable solution-phase chemical synthesis methods and produced hydrogen in acidic media, with champion devices producing photocurrents with incident photon-to-current efficiency of 12.7%.

“This development, as reviewed by our peers within the scientific community, reinforces the importance of identifying innovative materials that are both cost effective and more efficient than traditionally used semiconductors,” said Dr. Syed Mubeen, principal investigator of HyperSolar’s research team at the University of Iowa. “As we continue to drive down the cost of individual components within our completely renewable hydrogen generation process, the entire system becomes capable of producing cheaper hydrogen, and thus, more commercially viable.”

“We are very pleased to see the strong work performed by our research team at the University of Iowa, as these developments using earth-abundant materials continue to drive down the cost of photoelectrodes for hydrogen production,” said Tim Young, CEO of HyperSolar. “With its process and

routes to commercialization clearly defined, HyperSolar is laser-focused on identifying each component of the device that we believe will benefit from innovation, thus further reducing cost and increasing efficiency of the technology as a whole. The hydrogen generator must become more economically viable to reach commercialization, and we are confident in the long-term impact created by the collection of these technological milestones.”

While hydrogen continues to emerge as a solution for numerous technologies within a number of industries, the vast majority is produced via steam reformed natural gas which, while much cleaner than coal, is still a fossil fuel. The demand for hydrogen for fuel cell applications continues to rise, a trend that is expected to continue, as evidenced by recent announcements from automotive maker Toyota debuting new concepts, and General Motors and the U.S. Army collaborating on development of Army trucks. Further, according to recent market research reports, the rising awareness about the benefits of fuel cells and depletion of fossil fuels is expected to surge the demand for fuel cells in the years to come, resulting in approximately 45% market growth by 2022.

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## Robert Wendell's Rewrite:

### A Hydrogen Economy Sooner than We Think?

#### Hypersolar Finds Easily Scaled Up Process for Lower Cost Storage and Distribution of Green Energy

SANTA BARBARA, CA – October 24, 2017 – To be commercially successful, renewable hydrogen production needs less costly materials and methods. It also needs to be easier to scale up for industrial use. HyperSolar (OTCQB: HYSR), working with researchers at the University of Iowa, is now developing technology to greatly reduce costs. Hypersolar announced today its successful development of a key component made of earth-abundant light absorbing material.

**Their breakthrough?...direct photoactive conversion of solar energy to hydrogen that uses:**

- Abundant, cheap materials (tin and sulfur)
- Flexible design of electrical properties in tin monosulfide (SnS) semiconductors
- Clever new design tools that lead to stable SnS semiconductors specific to hydrogen production

This success enables generation of renewable hydrogen using sunlight and any source of water. Manufacturing these solar-hydrogen production units uses solution-phase chemical synthesis that:

- is easily scaled up for industry.
- produces stable units that continue to produce hydrogen even in acidic and alkaline media.



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- results in devices the best of which produce photocurrents with a solar-to-hydrogen energy conversion efficiency of 12.7% (typically ~5% for SnS semiconductors).

Dr. Syed Mubeen leads the University of Iowa researchers and published their results in *Advanced Science*. This peer-reviewed journal details news and breakthroughs within scientific disciplines, including Healthcare, Materials science, Sustainability, Nanotechnology, Energy, and Electronics.

Hypersolar is confident of the long-term impact of their technical successes. They expect a surge in demand for fuel cells based on several factors:

- Growing recognition of fuel cell benefits
- Rising awareness of decreasing fossil fuel supply
- The frequent finding that hydrogen is the answer to technical problems in a variety of industries
- Fast growing demand for hydrogen as the number of new uses for fuel cells increases

Evidence:

- Auto maker Toyota debuting new concepts
- General Motors and the U.S. Army collaborating on development of Army trucks.
- Recent market research reports

On the basis of these factors and this evidence, the researchers project about a 45% market growth by 2022. Many industries see hydrogen as a solution for numerous technologies, but steam reformed natural gas produces the vast majority. Although it's much cleaner than coal, it's still a fossil fuel.

"This development, as reviewed by our peers within the scientific community, reinforces the importance of identifying innovative materials that are both cost effective and more efficient than traditionally used semiconductors," said Dr. Syed Mubeen, principal investigator of HyperSolar's research team at the University of Iowa.

"As we continue to drive down the cost of individual components within our completely renewable hydrogen generation process, the entire system becomes capable of producing cheaper hydrogen, and thus, more commercially viable."

Tim Young, CEO of HyperSolar, said "We are very pleased to see the strong work performed by our research team at the University of Iowa, as these developments using earth-abundant materials continue to drive down the cost of photoelectrodes for hydrogen production.



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become more economically viable to reach commercialization, and we are confident in the long-term impact created by the collection of these technological milestones,” Young added.

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