Who is Harry Atwater?

Harry Atwater is the Otis Booth Leadership Chair, Division of Engineering and Applied Science, Howard Hughes Professor of Applied Physics and Materials Science, and Director, Liquid Sunlight Alliance at the California Institute of Technology.

What are Atwater's scientific interests?

Atwater's scientific interests span light-matter interactions from quantum nanophotonics, two-dimensional materials and metasurfaces to solar photovoltaics and artificial photosynthesis. Atwater is an early pioneer in nanophotonics and plasmonics; he gave the name to the field of plasmonics in 2001.

Can plasmonic nanostructures improve photovoltaic absorption?

Provided by the Springer Nature SharedIt content-sharing initiative This review article surveys the potentialof using plasmonic nanostructures to enhance the absorption of photovoltaic devices. As a result,the physical thickness of solar cells can be reduced,leading to new photovoltaic-device designs.

Who is Professor Atwater?

Professor Atwater has worked extensively as a consultant for industry and governmentand has actively served the materials community in a variety of roles,including President of the Materials Research Society in 2000,MRS Meeting Chair in 1997,and a member of the Board of Trustees of the Gordon Research Conferences.

Can photovoltaics solve the energy problem?

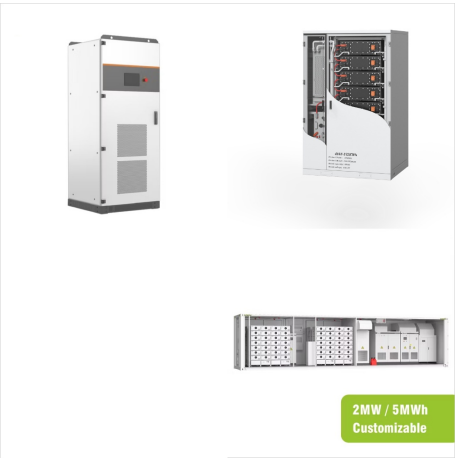
Worldwide photovoltaic production was more than 5 GW in 2008,and is expected to rise above 20 GW by 2015. Photovoltaics could thus make a considerable contribution to solving the energy problemthat our society faces in the next generation.

Can photovoltaics generate electricity on a large scale?

Photovoltaics,the conversion of sunlight to electricity,is a promising technology that may allow the generation of electrical power on a very large scale. Worldwide photovoltaic production was more than 5 GW in 2008,and is expected to rise above 20 GW by 2015.

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

Global average PV module selling prices have decreased by more than two orders of magnitude in a 40-year period (1, 2).Two years ago, we observed that if PV could continue on its historical learning curve, then PV module prices would reach $0.50/W and $0.25/W at a cumulative deployment of 1 and 8 TW, respectively ().However, by the end of 2018, with only ???



IEEE William Cherry Award to be presented at the 46th IEEE PVSC to . Professor Harry Atwater. Prof. Harry Atwater, Howard Hughes Professor of Applied Physics and Materials Science at the California Institute of Technology, will receive the 2019 IEEE William Cherry Award in recognition of his many and outstanding contributions to photovoltaic science and technology.

For decades, solar-cell efficiencies have remained below the thermodynamic limits. However, new approaches to light management that systematically minimize thermodynamic losses will enable

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Unassisted CO2 Reduction In article number 2201062, Bruce S. Brunschwig, Thomas Hannappel, Harry A. Atwater, and co???workers report a monolithic integrated photovoltaic???driven electrochemical

Harry A. Atwater has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO). Photovoltaic device with back side contacts. Patent number: 10797187

A new metal transfer process for van der Waals contacts to vertical Schottky-junction transition metal dichalcogenide photovoltaics. Cora M. Went, Joeson Wong, Phillip R. Jahelka, Michael Kelzenberg, Souvik Biswas, Matthew S. Hunt, Abigail Carbone, and Harry A. Atwater Science Advances 2019 (2020) - 2D Materials

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

Harry Atwater is the Otis Booth Leadership Chair of the Division of Engineering and Applied Science, and the Howard Hughes Professor of Applied Physics and Materials Science at the California Institute of Technology. His current research in energy centers on carbon capture and removal, high efficiency photovoltaics, and photoelectrochemical processes for generation of ???

Recent advances at the intersection of plasmonics and photovoltaics are surveyed and an outlook on the future of solar cells based on these principles is offered. The emerging field of plasmonics has yielded methods for guiding and localizing light at the nanoscale, well below the scale of the wavelength of light in free space. Now plasmonics researchers are turning their ???

Discover the latest information about Harry A. Atwater - D-Index & Metrics, Awards, Achievements, Best Publications and Frequent Co-Authors. you can contact us here. Best Publications Plasmonics for improved photovoltaic devices. Harry A. Atwater;Albert Polman. Nature Materials (2010) 7069 Citations Local detection of electromagnetic energy

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

We present a detailed design treatment for a concentrating photovoltaic mini module subsystem with a specific power of up to 4.1 kW/kg for integration into a space solar power system ncentrating designs are required to achieve specific power over 1 kW/kg with current high-efficiency III-V multijunction solar cells.The 15 sun, linear concentration concept ???

Harry A. Atwater, Jr., Howard Hughes Professor of Applied Physics and Materials Science; Director, Joint Center for Artificial Photosynthesis, has received the 2019 Institute of Electrical and Electronics Engineers (IEEE) William Cherry Award. Professor Atwater was recognized for his "many and outstanding contributions to photovoltaic science and ???

Harry Atwater is currently Howard Hughes Professor and Professor of Applied Physics and Materials Science at the California Institute of Technology. His research interests center around two inter-woven research themes: photovoltaics and solar energy; and plasmonics and optical metamaterials. Atwater and his group have been active in photovoltaics

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

Taking inspiration from nature and from the success of photovoltaic solar conversion, scientists are developing foundations for sunlight-driven synthesis of fue which is in contact with a porous gas-diffusion medium that facilitates the transport of carbon dioxide gas to the catalyst layer. Harry Atwater is the Howard Hughes Professor

Harry A. Atwater has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO). Systems and methods in accordance with various embodiments of the invention provide a photovoltaic

Harry Atwater, Howard Hughes Professor of Applied Physics and Materials Science and director of the Joint Center for Artificial Photosynthesis (JCAP), will receive the 2019 Institute of Electrical and Electronics Engineers (IEEE) William Cherry Award.. The award was established by the IEEE, an international association of technical professionals, to recognize ???

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

Harry Atwater is a Member of US National Academy of Engineering, and is also a Fellow of the American Physical Society, the Materials Research Society, Optica, SPIE, and the National Academy of Inventors. Effectively Transparent Front Contacts for Optoelectronic Devices. Advanced Optical Materials 2016 2015 IEEE 42nd Photovoltaic

Prof. Albert Polman is Scientific Group Leader at AMOLF, one of the research institutes of the Dutch research counsel (NWO) in Amsterdam, the Netherlands, where he heads the Program Light Management in new Photovoltaic Materials (LMPV). He is professor of Photonic Materials for Photovoltaics at the University of Amsterdam. Polman obtained his Ph.D. from the [???]

High Photovoltaic Quantum E???ciency in Ultrathin van der Waals Heterostructures Michelle C. Sherrott,?? ,??? and Harry A. Atwater*,?? ,???,?, contacts or at the junction. This is corroborated by the match between the experimental data (dots) and the ???tted expression

HARRY ATWATER PHOTOVOLTAIC CONCTACTS

Photovoltaic operation in the lower atmosphere and at the surface of Venus. Jonathan Grandidier, Alexander P. Kirk, Phillip Jahelka, Margaret A. Stevens, Pawan K. Gogna, David Crisp, Mark L. Osowski, Thomas E. Vandervelde, Harry A. Atwater, and James A. Cutts Progress in Photovoltics (2020) - Photovoltaics

(DOI: 10.1038/NMAT2629) The emerging field of plasmonics has yielded methods for guiding and localizing light at the nanoscale, well below the scale of the wavelength of light in free space. Now plasmonics researchers are turning their attention to photovoltaics, where design approaches based on plasmonics can be used to improve absorption in photovoltaic devices, permitting a ???

Harry Atwater's research centers around two interwoven research themes: photovoltaics and solar energy, and plasmonics and optical metamaterials. Atwater and his group have been active in photovoltaics research for more than 20 years. Recently they have created new photovoltaic devices including silicon wire array solar cells and transferred-layer designs for III-V ???