

Light-Inspired Solutions

A photograph of the Earth from space, showing a bright sunset or sunrise over the horizon. The sun is a large, glowing orb in the upper right, casting a golden glow across the sky and the Earth's surface. The Earth's curvature is visible, with green landmasses and blue oceans. The sky is filled with soft, white clouds. In the bottom right corner, there is a large, semi-transparent orange hexagonal shape.

Shine a light on this potential

using light to solve societal challenges

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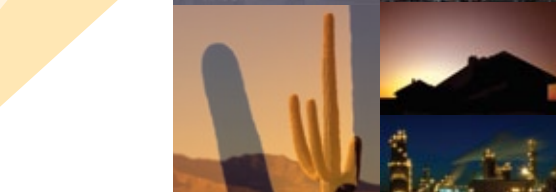
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Sunlight is the key ingredient for all life on Earth and is the single most plentiful renewable resource on our planet. The sun bathes the Earth's surface with far more energy than is currently used by society. Yet existing technologies tap only a small fraction of light's potential — a potential that extends beyond energy.

Harnessing the power of the SUN

A convergence of societal pressures, new discoveries, and technological advances is resulting in an unprecedented ability to leverage the interaction of light—natural or artificial—with living organisms and novel materials. This opens the doors to sustainable design, new fabrication practices, and breakthroughs in cost-effective solar technologies. Through integrated interdisciplinary efforts and cross-functional systems we are beginning to harness the energy of light with enough precision to transform it into a powerful tool capable of solving urgent problems affecting our planet and ourselves.

Arizona State University, one of the nation's largest universities, has the ideal geographical location to become the light innovation capital of the world. ASU has been a pioneer in solar research for the past four decades, and now it is bringing a set of much broader emerging technologies together in an initiative called LightWorks.



The Arizona Center for Algae Technology and Innovation

(AzCATI) serves as a statewide and international intellectual and resource hub for algae-based goods. AzCATI is Arizona's platform to spur a new industry cluster in research, development and commercialization of products along the algal value chain. This center finds innovative commercial uses for algae, operates as a learning environment for next-generation scientists, facilitates collaboration between higher education, industry and national entities, and is a national "test bed" for algae technology. AzCATI is administered and funded in part by Science Foundation Arizona and managed by ASU.



The Quantum Energy and Sustainable Solar Technologies

(QESST) Engineering Research Center aims to accelerate solar energy advances and solve challenges to harnessing solar power in economically viable and sustainable ways. Through partnerships with industry, the QESST Center accelerates the commercialization of solar energy technologies and increases opportunities for education in energy engineering.



Arizona Solar Summit

The Arizona Solar Summit brings together industry leaders, government policy makers, research institutions, and major landowners to discuss collaborations, projects, and policies affecting the solar energy industry on a grand scale. The Summit actively engages panelists and attendees in interactive facilitated discussions of challenges and proposed solutions associated with supporting and growing the country's leading industrial cluster in renewable energy and leadership, as well as reform and integration of critical federal and state solar-based policy initiatives.



LightSpeed Solutions

Sustainable Fuels • Secure Energy

LightSpeed Solutions is a collaborative effort among multiple institutions to develop energy systems that use sunlight, carbon dioxide, and water to produce sustainable, scalable, and infrastructure-compatible liquid hydrocarbon fuels.

a prism of possibility

LightWorks spectrum of innovation is aimed at a variety of applications

- low-cost, high-efficiency solar panel technologies
- renewable biofuel and biohydrogen production
- fungible fuels from CO₂, water and sunlight
- high-efficiency lighting, heating, cooling, and flexible display technologies



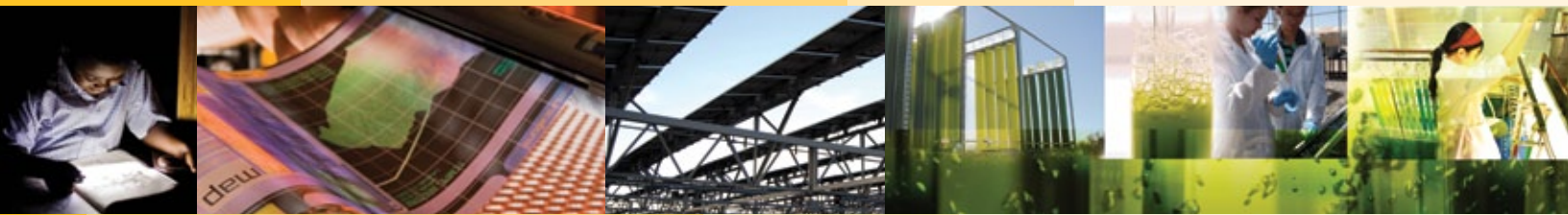


Energy education

ASU's goal is to prepare society for a transition to a more sustainable future, one that relies more on renewable energy. We are leading the way in this educational transformation by developing new frameworks for understanding energy and its broader societal and environmental contexts.

Through comprehensive education efforts and partnerships in energy change we are reaching across K-12, high school, special groups, and university settings to prepare to meet the future energy challenges. We are preparing tomorrow's leaders for a sustainable future.

Students can pursue a focus in energy policy, human and social dimensions of energy, and energy technology at ASU. Additional course offerings and degree programs are available for undergraduates and graduate students alike. Visit www.asu.edu/programs for more information on what course and degree offerings are available.



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