

Multimedia stories show how engineers shape the future

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LEDs (light-emitting diodes) have long boasted super energy efficiency. In recent years, engineering research on new materials and manufacturing techniques has enabled the production of LEDs with greater color range and performance. These advances are allowing LEDs to be used in many more applications, from lighting to TVs. Credit: © IEEE Spectrum

The National Science Foundation (NSF) today released a special report featuring the work of a creative group of researchers--engineers who are investigating new phenomena, devising new capabilities, and designing new technologies. Through a series of multimedia stories, "Engineers of the New Millennium" explores how engineers shape the future of robotics, water usage and energy development.

For example, one engineer is creating teams of reconnaissance robots for security and rescue agencies. Another is figuring out how to reuse waste water. And a third is making fuel from algae.

The researchers describe how innovations like these can help the nation overcome major challenges, launch whole industries, and help people enjoy happier and healthier lives.

The [multimedia content](#) of "Engineers of the New Millennium," which includes audio slideshows, videos and additional resources, is based on the radio series of the same name. Shows in the radio series were created through a partnership between NSF and IEEE Spectrum Radio that began in 2008 and continues today.

Topics developed for the special report include:

Robots for Real - Robots are emerging from industrial settings to help humans perform surgery, catch criminals, and even fend off the effects of aging. With new capacities for mobility, sensing and intelligence, robots are augmenting human capabilities in completely new ways. Some researchers are pursuing a vision of robots so smart and sophisticated that they can change their shape and abilities depending on the need at hand.

The Global Water Challenge - In a time of growing water demands and aging [water infrastructure](#), engineers are exploring how limited supplies of water can be used--and reused--more efficiently. They are creating new tools for sensing, purifying, and modeling water. They are also reshaping [water systems](#) for homes and communities, so that clean water isn't wasted. Ultimately, their work can help communities make more sustainable water choices.

The Energy Revolution - What will America's energy future look like? Light, electricity and automobile fuel still will be needed. But the light could come from super-efficient sources, now possible after decades of research. Electricity will come through a reinvigorated grid, pumped up with intelligence and flexibility. Additionally, engine fuel could be

produced by tiny algae, designed to pump out exactly the hydrocarbons vehicles need. Engineers are envisioning this future, and making it happen.

"Thanks to our partnership with IEEE Spectrum, NSF has been able to broadcast engineering research stories on public radio stations across the country," said Assistant Director for Engineering Thomas Peterson.

"Now we are delighted to share NSF research outcomes with new audiences via the web."

Provided by National Science Foundation

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