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Rocky Mountain Monthly

IES ROCKY MOUNTAIN SECTION

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Denver After Dark

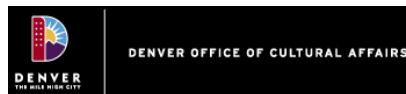
Join us for a magical stroll through Downtown Denver to take in the lights and sights of Denver at Night. This tour will be led by members of the



Illuminating Engineering Society, Rocky Mountain Section. This year's tour will introduce attendees to many of Denver's wonderful night time landmarks, old and new, with new destinations that were not on last year's tour. Your guides will walk you through the art and technology of

lighting in this vibrant urban landscape. Dress for the weather and wear good shoes, as there will be a lot of walking between destinations.

The tour will last approximately 75 minutes.



Register for this meeting right now!



Click here to be automatically directed to the registration website.

DENVER AFTER DARK MEETING DETAILS

Date: Saturday, April 17, 2010

Location: Colorado Convention Center meet at Blue Bear sculpture

Time: tour departs promptly at 7:30pm

Cost: \$FREE Members
\$FREE Non-Members
\$FREE Students

DIRECTIONS?
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Wisdom, Wonders, and Wit

NREL's New LED?

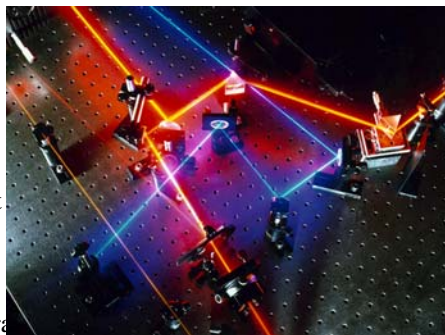
Light bulbs that last 100 years and fill rooms with brilliant ambiance may become a reality sooner rather than later, thanks to a National Renewable Energy Laboratory discovery. NREL scientists found a way to generate a tricky combination of green and red that may just prove to be the biggest boost for illumination since Edison's light bulb.

Green isn't just a symbol of environmentalism, it is a real color, and a desperately needed one for researchers looking for a way to light homes, streets and buildings at a fraction of today's costs. LEDs — light-emitting diodes — are the promise of the future because unlike tungsten bulbs or compact fluorescent bulbs, they deliver most of their energy as light, rather than heat. An extra plus is that they don't contain dangerous mercury.

The era of LEDs is fast approaching. The U.S. Department of Energy expects to phase out tungsten bulbs in four years and compact-fluorescents in 10 years. That will leave LEDs with virtually 100 percent of the market. To make an LED that appears white, researchers minimally need the colors red, green and blue. The white light from the sun is really all the colors of the rainbow. Without at least red, blue and green from the spectrum, no lighting device will be practical for home or office use.

Red proved easy to generate, and about 15 years ago, Japanese scientists found a way to generate blue, thus providing two of the key colors from the spectrum of white light. But green has been elusive. In fact, the \$10 LEDs that people can buy now are made to look white by aiming the blue light at a phosphor, which then emits green. It works OK, but the clunky process saps a big chunk of the efficiency from the light.

Along came NREL, a world leader in designing solar cells, but a neophyte in the lighting realm. NREL scientist Angelo Mascarenhas, who holds patents in solar-cell technology, realized that an LED is just the reverse of a solar cell. One takes electricity and turns it into light; the other takes sunlight and turns it into electricity.

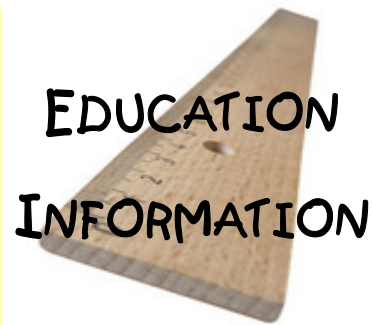


Astonishingly, once the concept was understood, Mascarenhas's team produced a red LED without any money backing the effort. The aim now is to provide a fourth color to make that white light even whiter. NREL plans to use a slightly deeper red and a lemony green, which would then be combined with a blue and a very deep green made using the gallium nitride based technology. In three years, NREL should have a bi-colored device that when teamed with blue and deep green can produce a sterling LED with a color-rendering index well over 90, Mascarenhas said. "It will give you one of the finest color-rendering white lights" and the manufacturing costs shouldn't increase, he said. "We have a patent on a device that will provide these two colors, as one unit, to industry," Mascarenhas said.

"We have full confidence that this is achievable," Mascarenhas said. "The technical things will be solved," he said. "This is practical science, not pie-in-the-sky science." The resulting white light LED will be intelligent. "We'll be able to electronically control the hue of the lamp," he said. "We can vary the combination of intensities of these four colors on an electronic circuit. By slightly increasing the blue, we can make it more suitable for daylight. By turning down the blue and increasing the reddish yellow, we can make it softer, more suitable for night. We can smoothly control the hue throughout the day like nobody has imagined. "

And, by the way, the move toward all LEDs all the time will save some \$120 billion in electricity between now and 2030, the Department of Energy forecasts. Not to mention tens of millions of tons of greenhouse gases. "This is reality," Mascarenhas said. "This is going to happen.

EDUCATION INFORMATION



LIGHTING FOR THE AGING EYE

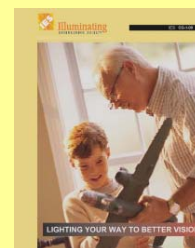
As we get older, nothing is more frustrating than not being able to see as well as we used to. An eye examination and new glasses can be a big help, but proper lighting is just as critical.

Whether seniors continue living in their own homes, or move to an apartment or retirement community, lighting is going to become an ever more important part of everyday life. It will add to comfort and enjoyment. And, it will help keep seniors safe.

This brochure describes some of the changes that can be made to a home's existing lighting to make it more comfortable and secure. Some solutions are easily accomplished; for example, by plugging a new fixture into an electric outlet.

Others require changing fixtures or providing additional electrical boxes for new ones. It is recommended that these changes be done by qualified people.

Click the brochure cover below to be directed to this file:



IES Board of Managers call for Volunteers

The Rocky Mountain section is always looking for new volunteers to help inspire top notch programming and services to our members. Maybe you have a hobby you'd like to share. Photography? Writing? Event planning? Let us know your passion. We'd love for you to join us!

E-mail us at info@iesrms.org today!

New Issue of LEUKOS

Just a quick reminder that the most recent issue of **LEUKOS**, *The Journal of the Illuminating Engineering Society of North America* (Volume 6, No.3) is now available online. Visit www.ies.org for more information. Featured articles include:

LIGHT LOSS FACTORS FOR SPORTS LIGHTING

KEVIN W. HOUSER MICHAEL P. ROYER,
AND RICHARD G. MISTRICK

DEMAND-RESPONSIVE LIGHTING – A FIELD STUDY

GUY NEWSHAM, AND BENJAMIN BIRT

LUMINOUS CHARACTERISTICS OF SHADING MATERIALS FOR OFFICE BUILDINGS: PERFORATED PANELS VS. FABRIC BLINDS

YU-SIN KIM, JI-SUN LIM, SEONG-KWAN HONG, JOON-BUM KWUN, AN-
SEOP CHOI, AND YONG-SHIK KIM

TUBULAR LIGHT GUIDES: ESTIMATION OF INDOOR ILLUMINANCE LEVELS

STANISLAV DARULA, FRANTIŠEK KUNDRACIK, MIROSLAV KOCIFAJ, AND
RICHARD KITTLER



Light Fights Crime in New York

Aldermen are clamping down on holiday lighting laggards, adopting an ordinance that requires specific time limits on seasonal displays.

"It's ridiculous to have Christmas lights displayed in the middle of summer," Mayor Steve Pannell told aldermen at Thursday's City Council session in proposing the ordinance. He said the situation makes the community look "tacky."

The new ordinance defines what constitutes holiday lighting and then sets a specific time limit for their display and take down. Holiday decorations are defined as ornaments, figures, statues, signs, inflatable characters and related products placed in a yard or on a building for a temporary period of time in observance of a holiday.

Outdoor decorative lighting refers to electrical wiring with one or more bulbs, or an illuminated fixture placed on a building, or in a yard. Holiday season means a reasonable and designated time period for the display of various holiday decorations.

The ordinance designates the established time period for holiday displays is from Nov. 1 through Jan. 31 of each year, and for all other nationally recognized holidays for a period of time not to exceed seven days. An exception for removal will be made for bad weather, Pannell said.



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