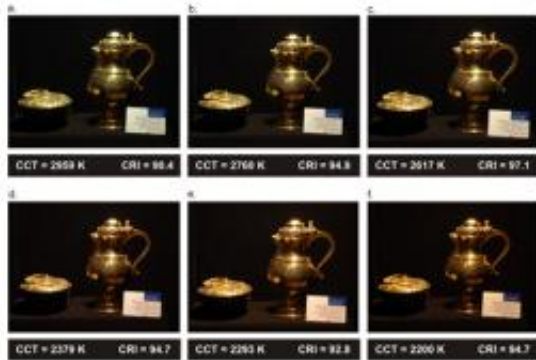


# All That Glitters Is Now Gold

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(PhysOrg.com) -- In full sunlight at mid-day, gold objects are brilliant and richly colored. Put those same objects in a dark interior room with only fluorescent lamps, however, and they will look pale and slightly greenish -- a problem arising from the inability of fluorescent lamps to render the optimal color temperature to reveal gold in its warmest light.

That's why museums and jewelry stores typically illuminate the [gold](#) objects in display cases with small incandescent bulbs, the only commercially-available lights that can emit soft yellow tones and warm [color](#) temperatures and render a true gold appearance.

Incandescent bulbs are a poor choice for other reasons, however. They are notoriously hot and can alter the temperature and humidity in display cases, potentially damaging priceless museum pieces. Besides that, the

European Union is phasing out the sale of incandescent bulbs starting this fall (a similar phase-out will go into effect in the United States beginning in 2012).

Now Paul Michael Petersen and his colleagues at the Technical University of Denmark have designed an alternative, energy efficient and non-heating light source for gold objects. After they were contacted by curators at Rosenborg Castle in Copenhagen, which houses the Royal Danish Collection, Petersen and his colleagues created a novel LED designed specifically to illuminate gold.

Combining commercially-available red, green, and blue LEDs with holographic diffusion, the new light can achieve a temperature and color rendering akin to incandescent bulbs -- with 70 percent energy savings and without emitting excess heat. They have been tested in a few display cases, says Petersen, and the lights will soon be installed throughout the [museum](#).

Scientists will present their paper "A New [LED](#) Light Source for Display Cases" at the Optical Society's Annual Meeting, Frontiers in Optics, on Wednesday, Oct. 14. The meeting takes place at the Fairmont San Jose Hotel and the Sainte Claire Hotel in San Jose, Calif.

Provided by Optical Society of America ([news](#) : [web](#))

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