

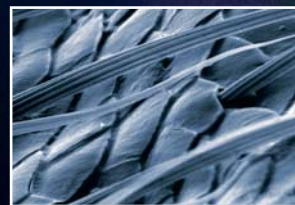


WAS IT DESIGNED?

The Lantern of the Photuris Firefly



Firefly: Gail Shumway/Photographer's Choice/Getty Images; scales: Optics Express



Jagged scales

THE lantern, or light organ, of a particular *Photuris* firefly is covered with jagged scales that dramatically enhance the brightness of the light that the insect produces.*

Consider: Researchers have found that tiny scales on the lantern surface of some fireflies form a corrugated pattern, somewhat like overlapping shingles or tiles. The scales tilt up at one end by just 3 micrometers—less than one twentieth the thickness of a human hair. Yet this tiny tilt lets the lantern shine almost 50 percent more brightly than it would if the scales formed an even surface!

Could that concept improve the efficiency of light-emitting diodes (LEDs), which are used in electronic devices? To find out, scientists coated LEDs with a corrugated surface similar to that of the firefly's lantern. The result? The LEDs emitted up to 55 percent more light! Physicist Annick Bay says: "The most important aspect of this work is that it shows how much we can learn by carefully observing nature."

What do you think? Did the lantern of those *Photuris* fireflies come about by evolution? Or was it designed? ■

* Scientists have not studied all species of this firefly.



Free downloads
of this magazine
and past issues



Bible available
online in about
50 languages

Visit www.jw.org,
or scan code



914 02-E
131022