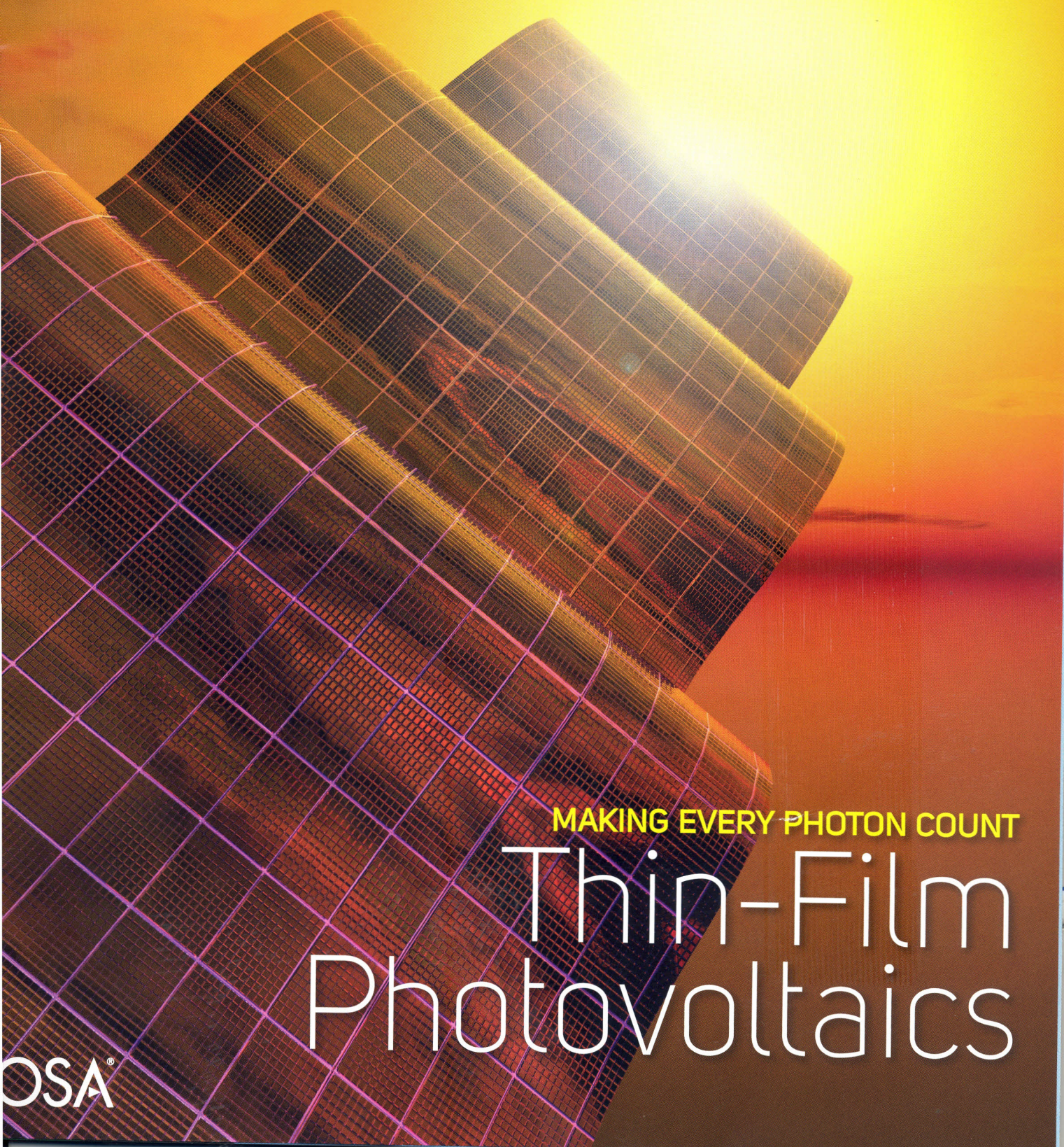


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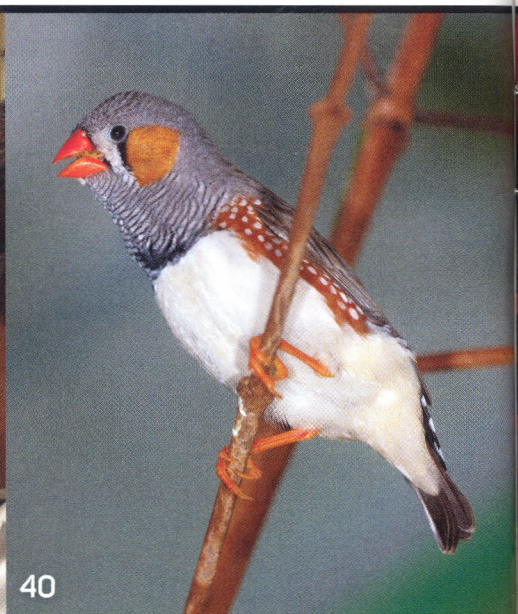
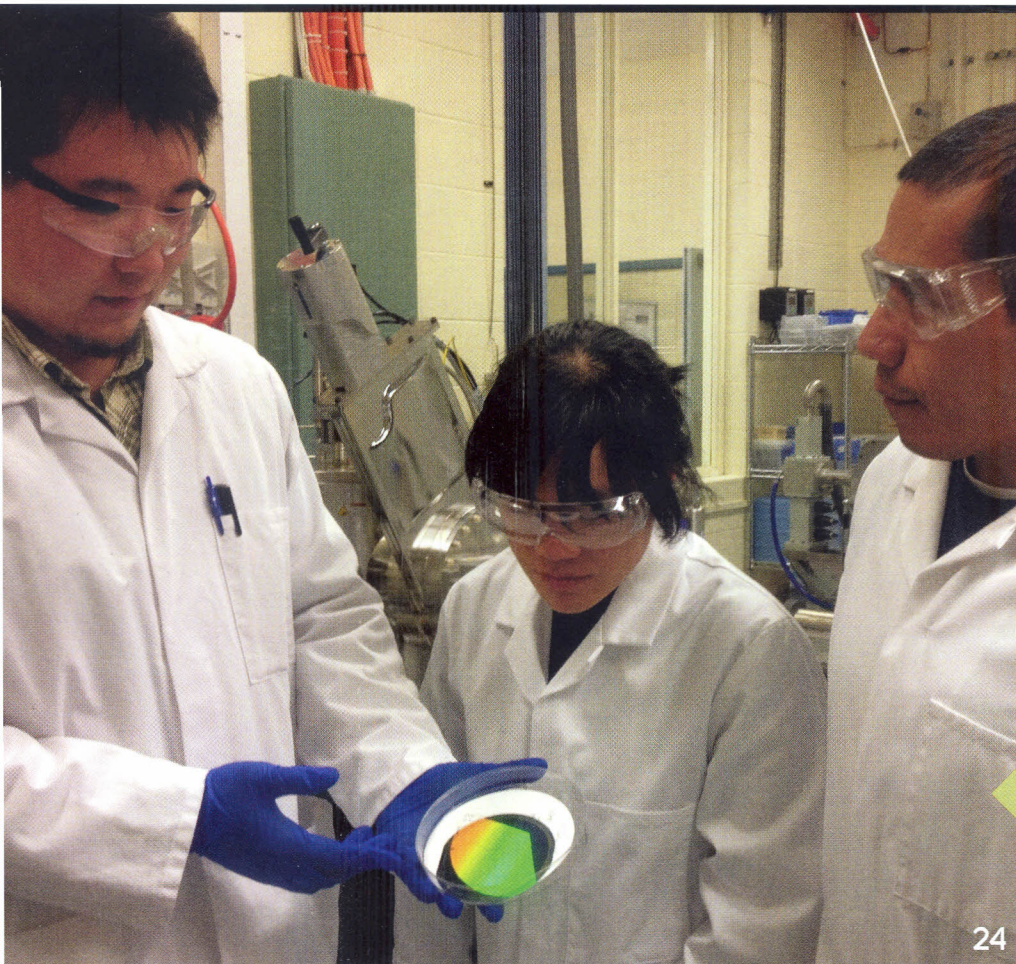
# OPTICS & PHOTONICS NEWS



MAKING EVERY PHOTON COUNT

## Thin-Film Photovoltaics

OSA®



40

Engineers can use nanoscale light trapping to create designs that enhance absorption beyond the limits achievable with geometrical optics.

24

**24 Thin-Film Photovoltaics: Making Every Photon Count**

Researchers are turning to organic and hybrid nanoscale structures to create more cost-effective solar cells. Thin-film photovoltaic technologies that incorporate silicon are among the best options for effectively managing light.

*Yvonne Carts-Powell*

**32 Fifty Years of Visible LEDs**

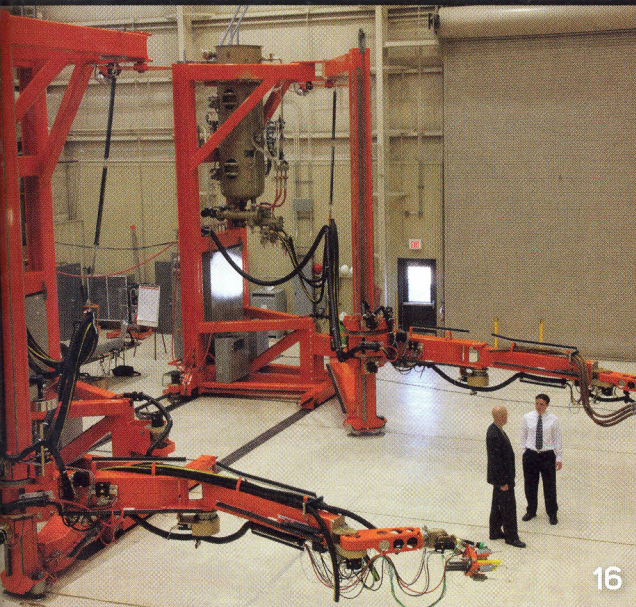
Originally a byproduct of the race to build a semiconductor laser, the visible light-emitting diode emerged in the fall of 1962. Following the “alloy road,” scientists have devised ever-brighter LEDs—and poised them to displace a century-old lighting technology. *Patricia Daukantas*

**40 Bird Brains: Using Picosecond Optical Tomography to Assess Neural Activity**

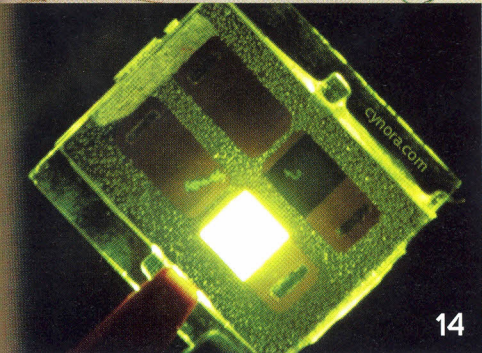
Imaging the brains of birds with picosecond optical tomography gives scientists a fascinating look into how these animals respond to calls and songs—and insight into how the technology could be applied to humans.

*Stéphane Mottin and Bruno Montcel*

# DEPARTMENTS



16 20



14 23



- 4 President's Message
- 6 Contributors
- 7 Optical Feedback
- 54 Product Profiles
- 56 After Image

## Scatterings

- 9 **Headliners:** Revealing light's effect on matter and more. *Patricia Daukantas and Yvonne Carls-Powell*
- 13 **Policy News:** U.S. science funding, honoring federally financed research. *Sarah Michaud*
- 14 **Industry Updates:** OLED markets, Alcatel-Lucent performance program, Nanosolar news. *Valerie Coffey*
- 15 **Book Reviews:** *Optical Technology* and more. *Darko Vasiljevic and others*

## Pulses

- 16 **Optics Innovations:** Optics at the Southwest Research Institute. *Thomas Moore*
- 18 **Member Lens:** Cool optics images from our readers.

- 19 **Conversations in Optics:** The most important skill to learn in grad school. *Jean-Luc Doumont, Alex Fong, Brooke Hester, Brian Monacelli*
- 20 **Optical Engineering:** Stereoscopic laser projection displays. *David Volpe*
- 23 **Global Optics:** CIOMP: The cradle of China's optics. *Ming Xuan*

## Backscatter

- 48 **Member News:** OSA/SIOM joint journal, CIOMP visit, Townes gets the Golden Goose and more.
- 49 **History:** Edward Leamington Nichols. *John N. Howard*
- 52 **In Memory:** Hyatt Gibbs
- 52 **Events Calendar:** Upcoming OSA meetings.

**COVER:** Artist's interpretation of thin-film photovoltaics. Phil Saunders, spacechannel.org