



FIONIA LIGHTING

COVER IMAGE

Energy-efficient, deep-red LEDs from Osram Opto Semiconductors promote greenhouse-cultivated vegetation.

NPG ASIA-PACIFIC

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Saving the planet

Increasing pressure to reduce greenhouse gas emissions and become more environmentally friendly is creating a myriad of opportunities for photonic technologies. The idea of using photonics to aid the environment has borne the concept of 'green photonics' (or 'eco-photonics'), which is now attracting the attention of funding bodies and researchers from around the globe.

This year's Photonics West conference in San Francisco had a large symposium devoted to green photonics. In an interview on page 274, Stephen Eglash from the Precourt Institute for Energy at Stanford University in the USA, who chaired the green photonics symposium, explains the roles that photonics is currently playing throughout the environmental industry. Indeed, the topic is now so popular that SPIE, the organizer of Photonics West, has now launched a dedicated eco-photonics conference, the first of which recently took place in Strasbourg, France.

Environmentally friendly photonic solutions cover a diverse range of fields, including solar energy, solid-state LED lighting, efficient optical communication, electronic paper, laser manufacturing and

sensing, to name just a few. Several of these are covered in detail in this month's Technology Focus, which is dedicated to the field of green photonics. On page 266, Henry Snaith from Oxford Photovoltaics explains how his firm is commercializing dye-sensitized solar cell technology for the lucrative market of building-integrated photovoltaics. On page 268, US firm Kotura describes its vision for next-generation energy-efficient optical communication and computing based on silicon integrated photonic chips, a technology that will help counteract the increasing amounts of heat generated and power consumed as electronic chips scale to higher data-processing speeds. In the field of LED lighting, the latest idea is to use LEDs not only as a means of illumination, but also for regulating and influencing the body's natural circadian rhythm, which has a strong response to blue light (see page 271).

Regardless of the particular technology, most of the photonic platforms mentioned above share a common theme: they offer an environmentally friendly way of either generating or saving electricity, and that can only be good news for the planet. □

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