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Editorial



NICOLAS BONOD

Editor-in-Chief

Light as the ultimate tool

Since the first tools shaped by human hands, technological progress has been driven by an ever-increasing ability to control matter. From forging to precision manufacturing, each step has extended our mastery of matter. This continuous refinement has also enabled the emergence of increasingly sophisticated technologies, and among them, lasers, which in turn have deeply transformed this trajectory. By enabling matter to be shaped, modified and probed with light, lasers introduce a new paradigm: light itself becomes a tool. From deep-ultraviolet photolithography to laser-based processes, both at the heart of intense research and major industrial challenges, light is no longer only used to observe the world, but also to shape and transform it with finesse and precision. With ultrashort and intense laser pulses, light-matter interactions enter highly nonlinear regimes and are governed by complex physical processes. Etching, structuring, or even creating new states of matter relies on mastering these regimes. Advanced optical manufacturing with ultrashort laser pulses is extending beyond the laboratory into industry. Laser processing has become a key technology, driven by its

precision, versatility, and its inherently clean, contactless, and chemical-free nature.

At the same time, lasers are at the core of some of the most ambitious large-scale scientific projects. The Extreme Light Infrastructure (ELI) pushes laser intensities to unprecedented levels, opening access to extreme regimes of light-matter interaction and enabling entirely new fields of exploration. In parallel, initiatives such as Laserlab-Europe play a key role in structuring the European laser community, providing access to cutting-edge facilities and fostering collaboration across disciplines. Together, they illustrate how laser science now operates across all scales, from industrial applications to fundamental physics, and both are featured in this international issue.

Light has accompanied every major step in our technological progress, from early experimentation to the most advanced scientific developments. Today, it enables us to shape and probe matter with a level of precision and control unmatched by any other approach. As new frontiers continue to emerge, light increasingly defines how we interact with matter, emerging as the ultimate tool.

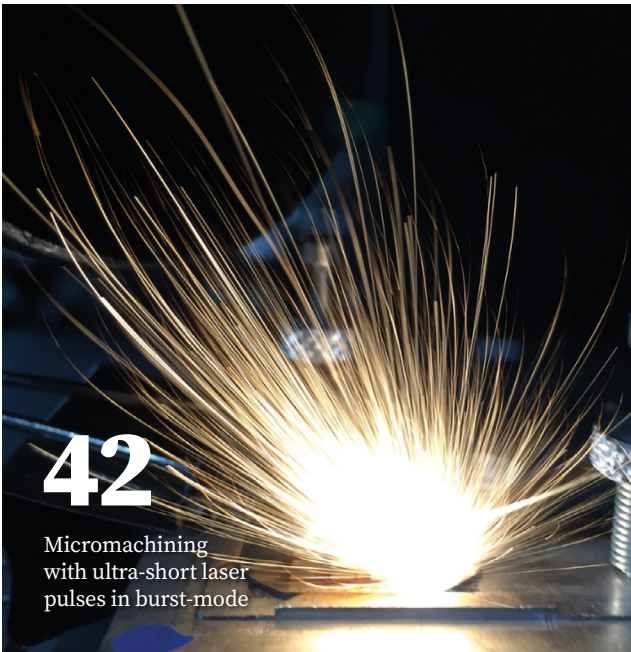


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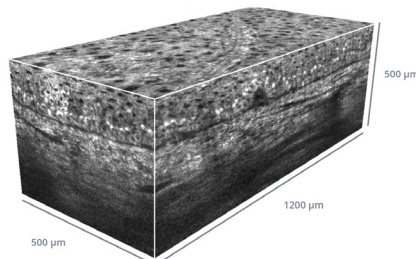


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SFO/EOS forewords



ANTOINE GODARD

President of the French Optical Society

Education: the Cornerstone of Excellence in Photonics

The dissemination of knowledge and the promotion of excellence in the fields of optics and photonics are among SFO's core missions. A key driver for addressing these priorities is education and training. At the European level, the most visible of our initiatives is undoubtedly the thematic schools aimed at PhD students and early-career researchers. These are, in particular, residential schools organised in partnership with the renowned École de Physique des Houches. Each year, an international thematic school is held there, focusing on a fascinating cutting-edge topic, where participants have the privilege of attending lectures delivered by leading scientific figures. SFO is also delighted to have been associated with the 360 CARLA Career Symposium & Training in Photonics, organised by EOS in Grenoble last March. SFO is actively involved at many other levels thanks to the significant work carried out by the Education Commission whose mission is to encourage, support and promote all types of initiatives aimed at advancing the teaching of optics in France. The LightBox kit is one of its flagship initiatives, in close partnership with AtoutSciences Association. This educational kit is made available to teachers at all levels, trainers, facilitators, associations and student societies.

Last but not least, the starting five-year LUMIFORM national programme, funded by France 2030 plan (Compétences et Métiers d'Avenir), aims to support and assist teachers for photonics education at operator and technician level, as well as to develop initiatives designed to make the photonics sector more attractive to students. This project is built around a rich and diverse consortium, fully illustrating the complementary roles of academic, voluntary and industrial stakeholders.

Through all these initiatives, SFO has set itself the mission of helping to attract the brightest, most innovative and most visionary talents in order to ensure academic, scientific and technological excellence in the fields of optics and photonics in France and Europe.

François Salin, Antoine Godard, Philippe Grangier
Presidents of SFO



EMILIANO DESCROVI

President of the European Optical Society

Expanding Global networking & Youth Engagement

In a time marked by global uncertainty, EOS is placing greater emphasis on the education of young people and on strengthening collaborations beyond the EU. In March, the 360 CARLA Symposium and Training, organized by Patricia Segonds (EOS Past President), David Ferrand, Nathalie Destouches and a highly dedicated team at the Institut Néel in Grenoble, brought together more than 150 participants. The atmosphere was informal yet focused, with young researchers moving between scientific discussions and conversations about career paths and opportunities in industry. A highlight was the talk by Anne L'Huillier, which stood out not only for its scientific value but also for the enthusiasm and inspiration she conveyed to the young audience. The effort was carried out in collaboration with the French Physical Society and SFO.

Looking ahead, the next major milestone will be the EOS Annual Meeting 2026 in Tampere this August, chaired by Goëry Genty, Juha Toivonen, Jyrki Saarinen, and Ignacio Moreno, with the support of Photonics Finland, Tampere University, and the PREIN Flagship. The program is broad, with 8 topical meetings, 5 focused sessions and several tutorials, alongside a strong line-up of plenary speakers including Hui Cao, Daniele Faccio, Fedor Jelezko, Donghyun Kim, and Polina Bayvel. Worth recalling the participation of Anne L'Huillier as an invited guest of excellence. A plenary session will be dedicated to education pathways in EU, from Erasmus and Marie Skłodowska-Curie schemes to newer initiatives such as Phortify. EOSAM will also feature a joint session co-organized with the Optical Society of Korea.

This June, EOS is co-organizing a session on light-responsive polymers at the Light Conference in Changchun, China, supporting the Light Publishing Group and the Chinese Optical Society.

Stay updated with EOS activities through our website and social media, where news, events, and opportunities from across the optics and photonics community are regularly shared.

Emiliano Descrovi,
Professor at the Politecnico di Torino, President of EOS



Make it EPIC!

In Photonics We Unite,
In Europe We Thrive

AGENDA



■ From Single Photons to Continuous Variables: 40 Years of Quantum Optics

Institut d'Optique,
Palaiseau

June 4, 2026 —
8:30 AM–6:30 PM

A one-day event honoring **Philippe Grangier**, CNRS Research Director Emeritus, and his major contributions to quantum optics—from squeezed light and quantum non-demolition measurements to quantum communications and simulations.

Free registration (mandatory)



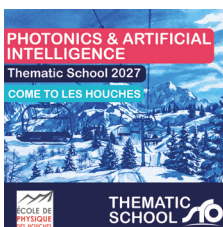
■ OPTIQUE BFC 2026

Dijon - Palais des congrès

06 - 10 July 2026

+ 670 participants expected

Register now
www.sfoptique.org



■ Photonics & Artificial Intelligence

The Houches Physics School, France

04 - 09 April 2027

70 attendees expected

Tour de France of Photonics at OPTIQUE BFC 2026 An initiative of the SFO Early-Career Researchers Club

From Bordeaux to Paris, from Nice to Rouen, and all the way to Dijon, French photonics unfolds as a scientific journey shaped by successive stages. On the occasion of OPTIQUE BFC 2026, the largest congress of the SFO, to be held in Dijon from July 6 to 10, the SFO Early-Career Researchers Club is launching a “Tour de France” initiative to highlight the diversity of actors, themes, and dynamics structuring the field today.

Through this initiative, the Club offers an original perspective on French photonics, structured around three complementary dimensions: territories, themes, and career paths.

Based on a series of interviews conducted during the congress, the project gives voice to researchers, academics, engineers, and industry representatives. Each contribution becomes a “stage,” illustrating a field of expertise or a local ecosystem and contributing to a broader vision of the photonics landscape. The initiative will culminate in a round-table discussion bringing together leading women researchers, offering a cross-cutting and dynamic perspective spanning fundamental science to industrial applications.

Held in Dijon in collaboration with ICB and Institut FEMTO-ST, the congress represents the point of convergence of this initiative, bringing together the different actors of the field in a shared space for exchange.

Through this “Tour de France,” the SFO Early-Career Researchers Club aims to enhance the visibility of photonics and foster dialogue across generations, disciplines, and territories, and local innovation and research ecosystems. With our warmest thanks to the commitment of early-career researchers leading this initiative with creativity and strong community roots, led by Mathis Fauchart (IMASOLIA), Julien Guise (IES, University of Montpellier, CNRS), Rémi Kieber (Institut FEMTO-ST, Besançon), and Arnaud Rogemont (Institut Carnot de Bourgogne, Dijon).

Register now to take part in OPTIQUE BFC 2026 and join this collective journey across French photonics.
www.sfoptique.org

Training through Experimentation: LumiForm and the Challenge MP

Through the 2026 Challenge in Physical Measurements (Challenge MP), the LumiForm programme highlights the already central, yet often implicit, role of photonics within Physical Measurements curricula. Here, these approaches are brought to the forefront as structuring elements, contributing to the recognition of photonics as a field in its own right.

Within this framework, as part of the LumiForm programme, the French Optical Society is developing a national initiative to strengthen and structure photonics training in France by connecting existing efforts and fostering new synergies between academia, research and industry.

Under the theme “Like a Taste of Summer”, 15 student teams from across France and Québec gathered on March 20–21, 2026, at IUT Montpellier-Sète. The event illustrates a hands-on approach to learning, where students design and implement their own measurement systems.

Drawing on four key optical techniques, transmittance for syrup classification, refractometry for honey moisture, spectrophotometry for olive oil acidity, and light-beam interruption for counting objects, the projects illustrate both the diversity and the tangible nature of optical approaches to physical measurement. To address these challenges, students relied on a broad set of photonic tools, lasers, LEDs, photodiodes and prisms, combining experimental approaches depending on the problem.

More than a competition, the Challenge acts as a revealer: it highlights pedagogical practices that are already widely implemented, while contributing to the structuring of photonics as a discipline in its own right. In this dynamic, the next edition of the Challenge MP will take place in 2027 at IUT de Schiltigheim, continuing to build momentum across the national network.

LUMIFORM is a national programme supported by the France 2030 plan (Skills and Occupations of the Future).