# Editorial

**NICOLAS BONOD**
Editor-in-Chief

## Optics for Life, A Life for Optics

Copenhagen, 15 August 1932. Niels Bohr, one of the founding figures of quantum physics, steps onto the stage to deliver the opening lecture of a conference devoted to phototherapy. In his lecture, entitled *Light and Life*, he questions whether physics might help in understanding living systems. Among the audience sits Max Delbrück, who would eventually shift from physics to molecular biology, a choice that ultimately led him to the 1969 Nobel Prize in Physiology or Medicine awarded for his discoveries on viral replication and genetic structure. His trajectory illustrates how physics and the life sciences have much to offer one another.

Light and life are intrinsically intertwined. Light ignites the emergence and growth of living organisms, and it provides an exceptional probe for investigating their inner mechanisms.

In this issue, we explore the most advanced optical methods for imaging and addressing the living world and life sciences. This issue features three articles that address all-optical neurophysiology, real-time tissue diagnostics, and smart illumination schemes for 3D biological imaging.

We are delighted to inaugurate here a new section, *Perspectives*, dedicated to forward-looking viewpoints on what photonics can bring. The inaugural article, *Sailing to the Stars with Photonics*, captures this spirit perfectly: envisioning high-power lasers propelling ultrathin reflective sails to significant fractions of the speed of light across the cosmos. The second contribution explores the very appealing field of photonic computing with fiber-optic solitons, while the third is devoted to quantum sensing, in resonance with the 2025 International Year of Quantum Science and Technology.

To celebrate the tenth anniversary of the first detection of gravitational waves, this issue features not one but two complementary articles on gravitational wave detectors. The first provides a complete introduction to kilometer-scale laser interferometers that can detect and triangulate the sources of gravitational-wave events occurring billions of light-years away; the second focuses on the implementation of squeezing techniques for quantum noise reduction.

All these topics illustrate how light opens pathways for exploring our world: from deciphering the intricate architectures and mechanisms of life to probing the most powerful events in the universe. Within the photonics community, we all stand together in this scientific and cultural adventure, placing light at the forefront of knowledge and progress: Optics for life, a life for optics.


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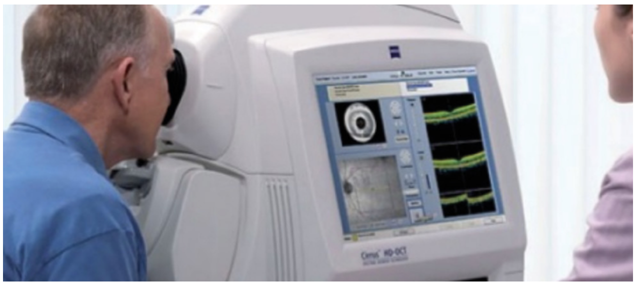

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FRANÇOIS SALIN
President of the French Optical Society

## Standing on the shoulders of giants

Since 2018, we have been organizing a residential school in partnership with the **École des Houches**. This program, initiated by Pierre Chavel, is now thriving, success rooted in a set of proven strengths. The first is the legendary École des Houches, founded by Cécile DeWitt-Morette in 1951. It is legendary in two ways: first, its breathtaking location—a mountain chalet facing Mont Blanc, an ideal environment for brainstorming; and second, its rich history. Since its inception, 59 Nobel laureates have participated, including E. Fermi, W. Lamb, R. Feynman, N. Bloembergen, R. Glauber. And, as a touch of French pride, P.G. De Gennes, C. Cohen-Tannoudji, A. Fert, Haroche, G. Mourou, A. Aspect, A. L'Huillier, P. Agostini, and M. Devoret also stand out.
Building on this heritage, the SFO schools at Les Houches established an excellent reputation based on core values. Among these are the organization by renowned experts in the field, whose dedication we sincerely appreciate; the active involvement of internationally acclaimed professors; the topics which are always at the forefront of scientific excitement. For example, the last four schools included: Optomechanics & NanophoNonics (2023, R. Braive, D. Lanzillotti-Kimura), Waves in Complex Media (2023, S. Gigan, N. Cherroret, A. Aubry), Thermics and Nanophotonics (2024, P. Bouchon Y. de Wilde), and Thin Film Lithium Niobate (2025, K. Bencheikh, A. Boes, R. Grange, and A. Mitchell). A distinctive feature of each SFO school is its comprehensive scope, addressing the continuum from fundamental science to technology and applications enriched by the active participation of industry colleagues.
Over the years, these SFO schools have attracted students from all continents. The upcoming school (March 2026) on Ultrafast Sources of Coherent Light, by Marc Hanna and Aurélie Julien, will also be a great success. It will mark the return of Anne L'Huillier to Les Houches for the first time since she was awarded the Nobel Prize.

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EMILIANO DESCROVI
President of the European Optical Society

## EOSAM in Delft: optics at its best

With a slight shift from recent tradition, the EOS Annual Meeting was held this year from August 24 to 28, in Delft. The city's picturesque canals and a mild late-summer climate offered a perfect setting for the EOS's flagship event, hosted at the TU Delft Conference Center. This edition, chaired by Omar El Gawhary (ASML & TU Delft) and Stefan Witte (TU Delft), with the support of EOS members Elina Koistinen, Ignacio Moreno, and myself, introduced interesting novelties.
Building on the successful experience of EOSAM 2024 in Naples, the EU session was expanded and promoted to a plenary format. Delegates from Photonics21, PhotonHub, Phortify, and PIX Europe presented the latest European initiatives and engaged the audience in a lively Q&A session on the future perspectives in the 10th Framework Programme. Another highlight was a joint session co-organized with the Chinese Optical Society (COS). A panel of speakers shared their perspectives on EU–China collaborations, illustrating ongoing research activities and personal experiences. This initiative was warmly welcomed and is likely to be repeated in the future, possibly in cooperation with other partner societies. In addition, an industrial podium supported by EPIC brought together experts from academia and industry to discuss human resource strategies. Recruitment of young talent, career expectations, and professional motivations were among the central themes addressed.
Overall, EOSAM 2025 attracted 440 participants from more than 30 countries, featuring 10 plenary sessions, 54 parallel session, 290 oral presentations, 82 posters, and 19 exhibitors. As tradition dictates, a topical issue on EOSAM 2025 is launched on the open-access journal JEOS-RP. We are pleased to see JEOS-RP continuing to strengthen its impact, while offering EOS members significant APC discounts.
Next year, EOSAM will move further north, to Tampere, Finland, from August 24 to 28. Save the dates, follow our newsletter and social channels, and visit https://www.europeanoptics.org/

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