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NICOLAS BONOD

Editor-in-Chief

Green photonics for blue horizons

The report released on August 9, 2021 by the *IPCC Working Group I* presents an increasingly accurate and realistic assessment of the climate crisis. It alerts us once more to the urgency of decarbonizing our societies. This report predicts an increase in the earth's average temperature of at least 1.5°C or 2°C during the 21st century. One month after the publication of this report, the *IUCN World Conservation Congress* was held in Marseille. Here again, their report is devastatingly worrying, with an alarming drop in biodiversity all over the world.

The challenges to be met in order to address these climatic and environmental issues are immense and will require a thorough-going transformation of our industries and ways of living. But these challenges also present great opportunities for photonic technologies which are strategically positioned to contribute to the development of green and low-carbon technologies. This is the reason why many companies in photonics are benefitting from this new momentum as they step up efforts to maximize their potential in the emerging field of green technologies.

Solar energy, bio-inspired materials and biomaterials, plastic detection, waste sorting, pollution sensors, UV treatments... the fields are vast and photonic technologies are well

adapted to invest in these multiple domains and environments. Photonic technologies have gained in efficiency, reliability and ergonomics. They must now, with the help of decision-makers and investors, accelerate their development and deployment to embrace these different fields.

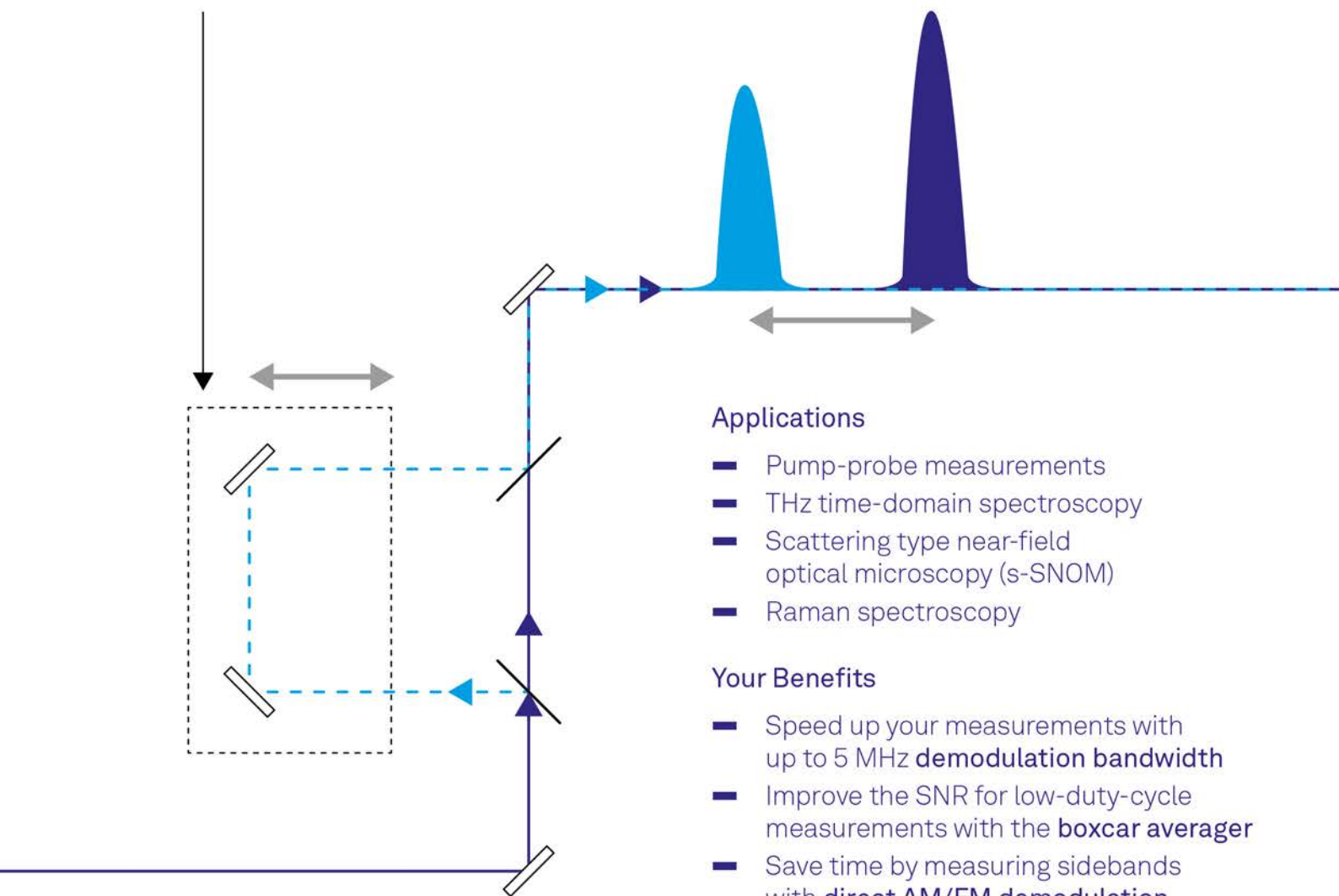
Courses in photonics must continue to gain momentum across European universities and schools so that students are being trained in these technologies. Graduate students will find themselves in the numerous positions of technicians and engineers in optics and photonics that will open up. They will also comprise the new generation of scientists and decision-makers who will govern the rise of green technologies.

In addition to the harmful impact they have on the climate, the capacity of greenhouse gases to absorb infrared radiation prevents telescopes on Earth from detecting infrared spectrum from space. One solution is to bypass the Earth's atmosphere by placing the telescope in space. The launch of the James Webb Space Telescope from Kourou scheduled for December 18 is certainly one of the major events of this year. The deployment of its 6.5 m mirror after its launch promises to bring space exploration into a new era. On Earth and in space, photonic technologies continue to open our eyes to blue horizons.

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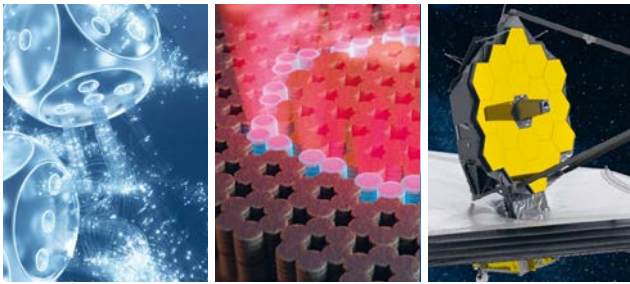


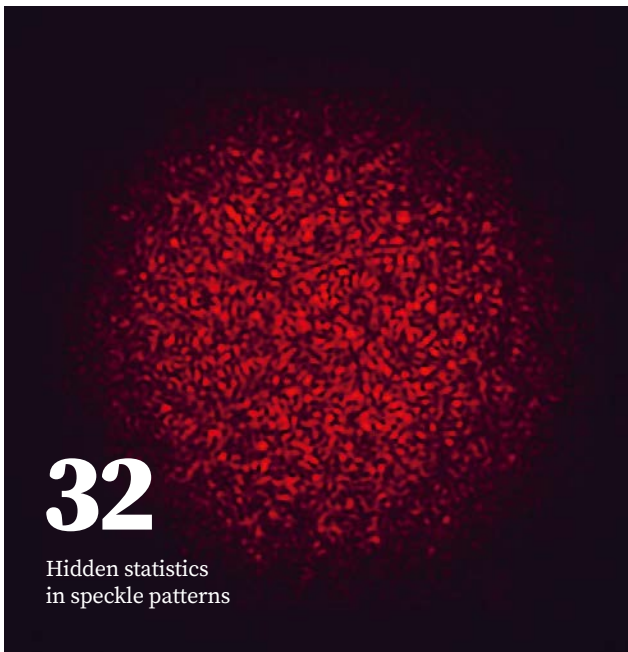
Table of contents

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N° 110

03 NEWS

Highlights & news from our 8 partners!

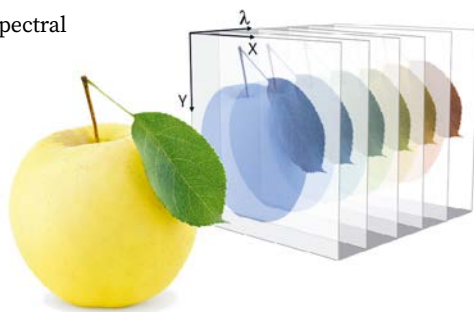


32

Hidden statistics in speckle patterns

58

VIS-NIR hyperspectral cameras



NEWS

- 03 EOS/SFO forewords
- 04 Partner news
- 15 Crosswords
- 16 Research news
- 20 James Webb Space Telescope

ZOOM

- 22 The advent of X-ray free electron lasers

BIOGRAPHY

- 28 Maria Mitchell

PIONEERING EXPERIMENT

- 32 Hidden statistics in speckle patterns

FOCUS

Green Photonics

- 36 Bio-based optical and photonic materials: towards nature-based production methods for photonics
- 40 Optical spectroscopy for the detection of micro- and nanoplastics in water
- 44 Light harnessing by Algae: from fundamental investigations to light-based biotechnologies
- 48 Photovoltaics: towards ultimate performances

BACK TO BASICS

- 53 Optical parametric oscillators

BUYER'S GUIDE

- 58 VIS-NIR hyperspectral cameras

PRODUCTS

- 65 New products in optics and photonics

Advertisers

2B Lighting	51
ALPAO	43
APE GmbH	53
Aragón Photonics / Wavetel	23
ARDOP	29
Comsol	09

Edmund Optics	27
EPIC	13
Glophotonics	19
HEF Groupe	21
Horiba	31
Hyspex	59
ID Quantique	49
IDIL fibres optiques	35
Imagine Optic	55

Laser Components	41
Lumibird	17
Lumibrid	57
MKS	05
Opton Laser International	61
Opton Laser International	IV° cov
Phasics	15
Quantify Photonics / Wavetel	45
Santec	39

Silios	63
Spectrogon	33
Spectros	18
Sutter Instrument	47
Trioptics	37
Yokogawa	25
Zurich Instruments	II° cov

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SFO/EOS forewords



PHILIPPE ADAM

President of the French Optical Society

After the summer deadlines, the French Optical Society (SFO) is gradually back to its normal rhythm. A great moment in our associative life is the holding of the General Assembly, scheduled for October 18, whose objective is to make an annual report on the SFO activity.

Indicators are good: building on the dynamics of OPTIQUE Dijon, 2021 saw an increase in the number of members, by more than 30%. It is also a proof of our dynamism and of the interest through the diversity of the projects proposed.

The financial situation is also improving thanks partly to the OPTIQUE Dijon 2021 event. Of course, efforts are still needed, but we are on the right track.

Our contacts with our national community have grown. The SFP is a privileged partner and exchanges are frequent. The scientific editor EDP is also a very present partner. It helps us in the distribution of our PHOTONIQUES magazine and SFO participates in the Scientific Advisory Committee.

Internationally, we note the reactivation of the Territorial Committee France at ICO. The five members, all from the SFO Board, are now clearly identified; they recently participated in the election of the new ICO board. At this occasion, Nathalie WESTBROOK was nominated as Vice-President of the ICO.

EOS is a historic partner. SFO and EOS work in close collaboration to federate the driving forces of optics in Europe. EOSAM 2021 in Rome was a great success. The SFO is delighted and notes the solidity of the link and the expression of a clear dynamic.

Finally, every two years, part of the SFO Board is renewed. In 2021, five elective seats were renewed. The next Board, scheduled for November 18 will work with this new team. I will then ensure the handover with Ariel LEVENSON who will then chair the destinies of the SFO for the next two years.

Two years is both long and short: long because the period has been complicated. Short because the task was exciting. Ariel will take over: no doubt that a new dynamic will be put in place, with new ideas and this for the greater well of our Learned Society.

Thank you all for your listening, your initiatives and your help.

Optically yours



GILLES PAULIAT

President of the European Optical Society

Face-to-face seminars and conferences have finally resumed! Our photonics community has responded overwhelmingly and enthusiastically to these in-person meetings. This underlines our need to exchange in order to develop new ideas for the future. The first EOS in-person meeting since 2019 was EOSAM 2021, organized on September 13-17 in Rome Italy. EOS organized it in close co-operation with the Societat di Ottica e Fotonica, SIOF, the Italian optical society Branch member of EOS, and the Universita di Roma La Sapienza. For the first time, EOSAM was held in a hybrid format mixing on-line attendees with on-site participants. With over 350 on-site attendees and 180 on-line attendees, from 33 countries worldwide, this hybrid format was a real success and worth to be repeated in the future! On-site participants benefited from an exceptional venue. The meeting was held in the premises of Universita di Roma La Sapienza, in the center of Roma. Among the EOSAM highlights, was the ICO award ceremony, the prize winner being M. Guizar-Sicairos. The awarding of this prize during EOSAM underlines once again the cooperation between the many learned societies around the world. Isn't the slogan of ICO, the International Commission for Optics, "The place where the world of optics meets"?

This need to exchange and communicate is a necessity and lies at the heart of our scientific activities. EOS was created by the learned National Societies in Europe to strengthen our links; and EOS is currently exploring new ways to reinforce this cooperation at the European level. Research is indeed about pushing the boundaries of knowledge. This is done, within each field, by an ever deeper understanding of physics. Other frontiers can be crossed by confronting our knowledge with the demands of society. This issue of the journal is an opportunity to reflect on this approach. Typically, green photonics is the answer of our community to a societal problem (energy, pollution...). This suggests that many other frontiers exist that we are probably not even aware of, in forestry, agriculture, food, health...

This is the role of our learned societies to build bridges to these other fields; EOS is working on this year.

Enjoy your reading!