

## Preface

The 2020 annual congress of the European Optical Society (EOS) has been celebrated online for the first time in its history. This has been a bold movement, forced by the exceptional circumstances of the global pandemic faced by the World. Despite the hard circumstances, we consider that the response from the European optical community has risen to the occasion as it shown by the number and quality of the communications presented that are published in this volume.

Therefore, the conference has been extremely successful in its contribution to the main mission of the EOS: bring together and encourage the cooperation in Europe of all with an interest in optics, photonics and related scientific fields, to make practical use of research results, and to support the industrial exploitation of optics and photonics.

More than a hundred of talks and posters were presented and all the national optical societies in Europe were represented as well as international partners like the International Commission for Optics, the European Physical Society, the Japan Society of Applied Physics, the Optical Society of Korea, the Optical Society of Japan, the Chinese Optical Society, the Taiwan Photonics Society and the Optical Iberoamerican Network (RIO).

The four-day online conference included five plenary talks given by outstanding scientists working in the most important areas of optics and photonics. Yuri Kivshar from the Australian National University spoke about the main advances in photonic properties of metasurfaces, Luis Plaja from the University of Salamanca presented the latest results on ultra-high power lasers, Hatice Altug from the Ecole Polytechnique Federale de Lausanne lectured on nanophotonic biosensors and José Luis Santos from the University of Porto gave a talk on new paths in optical sensing.

Each day, in addition to plenary talks, parallel video sessions were held in combination with life chat interactions between the congress attendees and the authors. In addition, a call was made for submission of selected papers for publication in JEOS:RP, the journal of the European Optical Society, covering the latest advances in both theory and applications of optics and photonics grouped on the following TOMs (Topical Meetings):

TOM 1- Silicon Photonics and Guided-Wave Optics

TOM 2- Computational, Adaptive and Freeform Optics

TOM 3- Optical System Design, Tolerancing and Manufacturing

TOM 4- Bio-Medical Optics

TOM 5- Resonant Nanophotonics: fundamentals and applications

TOM 6- Frontiers in Optical Metrology

TOM 7- Organic & Hybrid Semiconductor Materials and Devices

TOM 9 - Tapered optical fibers, from fundamental to applications

TOM 10- Optical communications

TOM 11- Thermal radiation and energy management

TOM 12- Nonlinear Optics: materials and applications

TOM 13- Advances and Applications of Optics and Photonics

We would like to express our gratitude to the Board of the European Optical Society, the EOS Executive Director, the EOS Office staff and the chairs of the different TOMs for their support and help in the organization of the Conference. We finally want to acknowledge all the authors that have submitted their work to be included in this volume and very specially thank all those collaborating persons who acted as reviewers of the papers included in this volume for their excellent work.

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