

ICO

Activities' Report - Year 2020

Delegate/Author Name
Paolo De Natale

Specific actions in 2020 from the *Green Book* summary-edited by the Italian ICO President R. Ramponi

ICO, being founded in 1947, is now more than 70 years old, and it is composed of 53 territorial committee members and 7 international society members. It is an affiliated Commission of the International Union for Pure and Applied Physics, IUPAP, and an affiliated member of the International Science Council, ISC.

ICO aims to be the place where Optics meets the World, overcoming social, economic, religious and political barriers in the name of Science. In the past four years, ICO has been facing and still faces a crucial phase. The importance of optics and photonics as key technologies to foster sustainable development and to meet the societal challenges that the World is dealing with, keeps growing, and this gives us tremendous opportunities together with important responsibilities. Despite limited budget, teaming up with ICO Members, the Territorial Committees and International Societies, and thanks to the continuous support of enthusiastic volunteers, can help the world-wide optics and photonics community to be a key policy-making player in our knowledge-based society, fostering the use of scientific and technological capacity to reduce the gap between developing and developed countries, favouring an open science approach, fruitful interactions and people mobility.

The last year, 2020, has been very special, due to the pandemic, and ICO activities have been consequently significantly reduced, all the in person events cancelled.

ICO-25 was supposed to be held in Dresden, Germany, in 2020, together with the 16th Conference of the International Society on Optics Within Life Sciences (OWLS-16), but it had to be postponed due to the pandemic related to COVID-19. Initially rescheduled from 13 to 17 September 2021, considering travel restrictions and difficulties still in place, it is now postponed from 5 to 9 September 2022. However, ICO General Assembly will take place online on 14 and 15 September 2021, together with elections of the Bureau and Executive positions for the next term (2021-2024).

Among ICO flagship activities it is worth mentioning the yearly award program, including ICO Prize, ICO Galileo Galilei Medal, IUPAP Young Scientist Prize in Optics, ICO/ICTP Gallieno Denardo Award. Through these awards, ICO recognises the contribution to optics and photonics of promising young scientists who achieved breakthrough results in the early stage of their careers, of inspiring scientists giving outstanding contributions to the field working under comparatively unfavorable circumstances, and of young researchers from developing countries who conduct their research in developing countries. ICO Awardees become ambassadors of Optics and bring to the World a positive message of optimism and trust in science.

Another distinctive ICO activity is the Traveling lecturer program, that aims to promote lectures on modern aspects of optics and photonics in interested Territories, by scientists of international reputation with good lecturing skills. The program is focused specially at developing nations, but is

not necessarily restricted to them. Through this program ICO aims to attract young students and researchers to pursue their future in optics and photonics and to favour closer collaboration between the lecturer and the scientists of the destination Territory. The program experienced a stop in 2020 due to the pandemic. However, it has shown a good impact throughout the years and received very positive feedback, both from the lecturers and from the hosting territories. It will restart in 2021.

ICO sponsors, every year, conferences and workshops on Optics and Photonics organised with the support of Territorial Committees. Moreover, ICO is among the founding partners of the biennial International Conference on Education and Training in Optics & Photonics (ETOP) that brings together educators from around the world, to share information about Optics teaching at all levels. Indeed, to ensure that optics and photonics future workforce can meet the growing needs, expectations and challenges of research, science, and industry, and be at the core of today's worldwide technological infrastructure, related teaching must continuously be upgraded and renewed.

Following the great success of the International Year of Light 2015, an International Day of Light (IDL) has been established and celebrated every year, on May 16th. ICO has given its active participation and contributed speakers at some of the official events, and helped promoting activities. This year, the focus of the IDL is the Trust Science Campaign (#LightDay2021 #TrustScience) that ICO signed and promotes. Indeed, the World probably never experienced as hardly and widely as under the current pandemic conditions the need to rely on Science and Technology to win the threats that can arise from everywhere, from natural events and from human misconduct, and to find solutions capable of improving our quality of life. Optics and photonics are one of the keys for a better and sustainable future.

At the 2017 General Assembly in Tokyo, the decision to follow-up with all actions needed to become an independent Union within the International Council of Science Unions (ICSU) was voted at large majority, motivated by the much wider targets and impact that Optics and Photonics have nowadays, if compared to the past when Optics was primarily seen as a branch of Physics. Despite the strong relationship with Physics and the excellent cooperation within IUPAP, ICO representatives believe that being an independent Union will allow to collaborate more efficiently and fruitfully with all the Scientific and Technological Institutions, representing areas where Optics and Photonics may find application and have an impact (e.g. Engineering, Material Science, Life Science, Agrifood, Chemistry, Advanced Manufacturing, Smart Lighting, Energy, Cultural Heritage, Digital Innovation, and Circular Economy). At the beginning of December 2019, ICO President signed a Memorandum of Understanding with the International Union of Pure and Applied Physics, dealing with mutual relation and cooperation, to prepare a future International Union of Optics and Photonics. Meanwhile, the international frame had changed. Indeed, in 2018 the International Science Council (ISC) was founded, as the result of a merger between ICSU and the International Social Science Council (ISSC). ICO was immediately recognised as Affiliated Member of ISC. To become a Full Member, ICO needs first to sitch its status to that of an independent Scientific Union. Thus, during the online General Assembly in September 2021, to follow up with the strategic planning approved in 2017, ICO will need to vote a new resolution to become independent of IUPAP, so as to meet the requirement to apply for full membership with ISC.

Signature

Place and date

Firenze, May 26th 2021