



## **ICO admitted as ICSU International Scientific Associate**

### ***Summary***

*ICO, the International Commission for Optics, has been accepted as an International Scientific Associate of ICSU, the International Council for Science. ICO is the global umbrella organization of optics – "the place where the world of Optics meets" – representing about 50 Territorial Committees and all major internationally active Optical Societies. The election of ICO as an ICSU International Scientific Associate is one further step towards the recognition of Optics as a scientific discipline of its own. However, ICO will keep its status as an Affiliated Commission of IUPAP, the International Union of Pure and Applied Physics. Optics still has its roots deeply in Physics and this will remain so – let it be enough to mention the 2005 Nobel Prize in Physics, awarded to Roy J. Glauber, John L. Hall, and Theodore W. Hänsch for their outstanding work in optics.*

At age 58, ICO is moving ahead to better and more visibly fulfill its mission as "the place where the world of Optics meets": it was just elected an International Scientific Associate at the ICSU General Assembly in October 2005. The whole field of optics is thereby improving its recognition as a discipline, in many ways connected to all other disciplines within science and technology. Let us explain why and how this is so, at the same time reviewing what ICSU is, and exactly what move ICO just made in the ICSU family.

ICSU, currently known as the International Council for Science, has retained the acronym of its original name, the International Council of Scientific Unions. An independent international organization, it represents all disciplines, promotes their interaction in interdisciplinary actions, and fosters scientific research through its links with other international bodies, in particular in relation with global challenges that mankind is facing such as sustainable development, earth observation, energy, and food security. ICSU has four categories of members: International Unions, National Members, International Scientific Associates, and National Associates.

The concept of national membership in ICSU extends to many members of the ICSU family: this is really why, since it was first created in 1947, ICO's membership is primarily based on national membership, the Territorial Committee Members in the current ICO terminology. In addition, ICSU has members that represent scientific disciplines at an

international level. These are the ICSU International Union Members. One of the 25 or so Union Members is the International Union of Pure and Applied Physics, IUPAP. In the ICSU construct, IUPAP itself has national members and 'Commissions' representing the various branches of Physics. Among the commissions, a few enjoy the status of an independent organization and have their own membership and budget: these are the IUPAP 'Affiliated Commission', a status that ICO has shared since its creation.

An important step in the recent history of ICO, though, is the creation, in 1999, of a new category of membership, the 'International Society Members', to recognize the fact that most international scientific conferences nowadays, as opposed to the situation in 1947, are organized by large societies that have individual members and that are explicitly active internationally. As of today, ICO has fifty Territorial Committee Members<sup>1</sup> and six International Society Members<sup>2</sup>. With this structure, ICO has a fair claim at representing the whole field of Optics on an international scale.

By moving to the status of an ICSU 'International Scientific Associate', the desire of ICO is to make it clear that with the continuous development of science and technology in research and industry, the relation between Optics and Physics has become more complex. Optics still has its roots deeply in Physics and this will remain so – let it be enough to mention at this point the 2005 Nobel Prize in Physics, which was awarded to Roy J. Glauber, John L. Hall, and Theodor W. Hänsch for outstanding upstream work in optics, with practical implications. Indeed, in parallel to being raised to the status of an ICSU International Scientific Associate, ICO will keep its status as an IUPAP Affiliated Commission. Yet, large branches of Optics developed where scientists and engineers do not consider them selves physicists and are not considered as such by physicists. This applies, for example, to most work in optical systems and in optical telecommunications. Optics courses and research activities at many universities are more and more being promoted to full fledged departments. The recognition of optics professions and degrees by accredited institutions is a significant issue in various countries. This all boils down to one conclusion: Optics is more and more perceived as a scientific discipline of its own. Its recognition as an ICSU International Scientific Associate is one further step in that direction.

---

<sup>1</sup> Argentina, Australia, Belgium, Bielorrussia, Brazil, Canada, the Chinese Optical Society, Colombia, Cuba, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Germany, Ghana / West Africa, Greece, Hungary, India, Indonesia, Ireland, the Islamic Republic of Iran, Israel, Italy, Japan, the Republic of Korea, Latvia, Lithuania, Mexico, Moldova, Morocco, Netherlands, New Zealand, Norway, the Optical Engineering Society Taipei China, Poland, Romania, Russia, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Tunisia, Turkey, Ukraine, the United Kingdom, the United States of America, Venezuela.

<sup>2</sup> The African Laser, Atomic, Molecular and Optical Physics Network (LAM), the European Optical Society (EOS), the IEEE Society for Lasers and Electro-Optics (IEEE/LEOS), the Optical Society of America (OSA), the International Society on Optics within Life Sciences (OWLS), the International Society for Optical Engineering (SPIE)

In this new position within the ICSU constellation, ICO will be acting at par with the other twenty five or so International Scientific Associates, along with Water Resources, Geometry, Oceanic Resources, to name a few. It will participate in the appropriate ICSU activities and will be able to liaise between the Optics community and ICSU by bringing up and promoting opportunities for actions involving optics that bear a global dimension both geographically and topically. This includes, directly in line with a clear ICO priority item, actions for the support of science and technology in regions of the world that deserve special measures, such as its long standing collaboration with the Abdus Salam International Centre for Theoretical Physics at Trieste.

Optics is relevant to most ICSU priorities on the global role of science and technology. The admission of ICO as an ICSU International Scientific Associate recognizes ICO as a global organization, the primary international group that, through its members even much more than all by itself, coordinates the dissemination and advancement of scientific and technical knowledge in the broad fields of optics: make contacts, provide expertise, offer a neutral international character, etc. More importantly, it is one step forward for the recognition of the importance of Optics for Science and for Society in the 21<sup>st</sup> century. ICO will strive to make best use of this opportunity and calls to its members and the many parts of the Optics community that they represent to join it and contribute new initiatives.

**Pierre Chavel**

ICO-ICSU Relations responsible