



**INTERNATIONAL COMMISSION FOR OPTICS**  
**COMMISSION INTERNATIONALE d'OPTIQUE**

## **Annual Report of ICO to IUPAP**

### **External Commission AC.1**

**Period: October 2009-October 2010**

The International Commission for Optics (ICO) was founded in 1947, with the main objective to incentivize and expand the activities in the area of science of optics and photonics, and with a particular emphasis on those regions of the world less favored.

ICO is organized by Territorial Committees (TC). At present, there are a total of fifty one TC distributed in all the five Continents.

These activities are concentrated in the following actions:

- 1) Sponsorship, co-sponsorship and endorsement of scientific meetings devoted to general and special topics in the area of optics and photonics.
- 2) Support of the activities of the optics and photonics programs at the Abdus Salam International Center for Theoretical Physics (ICTP), in Trieste (Italy). ICTP is a research and training center attached to UNESCO.
- 3) Four different awards addressed to scientists of the optics and photonics community under the following definitions: ICO Prize, to be given each year to an individual who has made a noteworthy contribution to optics, published submitted for publication before he or she has reached the age of forty. IUPAP Young Scientist Prize in Optics, offered by IUPAP and managed by ICO, to a scientist who has made noteworthy contributions to applied optics and photonics during a maximum of eight years of research experience after having earned a PhD degree. The award was created in 2009. ICO Galileo Galilei Award, awarded for outstanding contributions to the field of optics which are

achieved under comparatively unfavorable circumstances. ICO/ICTP Gallieno Denardo Award, it is reserved for young researchers from developing countries (as defined by the United Nations), who conduct their research in a developing country.

- 4) ICO Travelling Lecture Program, to promote lectures on modern aspects of optics in interested territories by scientists of international reputation with good lecturing skills. The program is aimed specially at developing nations, but is not necessarily restricted to them.
- 5) Periodical publication of the ICO Newsletter, with a total of four annual issues and disseminated to all the ICO Territorial Committees.
- 6) Participation in the Education and Training in Optics and Photonics (ETOP) activities and in the Scientific Advisory Committee along with three professional societies: IEEE/LEOS, OSA and SPIE.
- 7) Participation in the Steering Committee of the Information Photonics series of meetings (earlier defined as Optical Computing).
- 8) Participation in the international program: Active Learning in Optics and Photonics (ALOP) with special emphasis on Latin-American centers and addressed to High School and Colleges teachers. ALOP is an educational program specially encouraged by UNESCO.

For the period for which this report is centered one can specifically mention the following events for the above mentioned items:

**Item 1)** A total of eleven scientific meetings were sponsored and co-sponsored by ICO (see attached separate file). The total budget dedicated to this item was of 10,000 USD. In particular, for the first time, and ICO Topical meeting on Optics and Energy will be held in Paris, next 28-29 October, 2010, as a joint venture with the European Optical Society (EOS) and under the EOS General Meeting and the so-called PRI-Opto exhibition dedicated to optics and photonics technologies. IUPAP was sponsoring this Topical Meeting and accorded a grant of a total of 3,500 euros, to support the attendance to the meeting to scientists from developing countries. This grant has been distributed as follows: Zohra Ben Lahkdar (Tunisia, 350 euros), Paul Buah-Bassuah (Ghana, 350 euros), Marembo Karemera (Rwanda, 1,000 euros), Tahani Mohammed Shatir (Sudan, 750 euros), Ahmadou Wagué (Senegal, 350 euros), Klaudia Zenkova (Ukraine, 350 euros), Mourad Zghal (Tunisia, 350 euros). Among the seven awardees a total of three are women in science from Ukraine (one) and two from Africa.

ICO was offering a grant of 1,000 USD to an African scientist and another 1,000 USD to an Armenian scientist to attend the last Photonics Europe meeting, held in Brussels last January 2010, and as a first accorded grant to an SPIE meeting organized by SPIE Europe.

**Item 2)** ICO is traditionally involved and sponsor, with financial support, in the organization of the ICTP Annual Winter College held at the ICTP, Trieste, Italy. For the year 2010 the College was organized for the topic on Optics and Energy and with attendance of 100 participants, all young scientists and PhD students, mainly coming from developing countries. Moreover, ICO is a founder member of the so called Trieste System for Optical Sciences and Applications (TSOSA) Advisory Group, created by the late Prof. Gallieno Denardo in 2003 to promote optical sciences in the developing world. TSOSA includes representatives from SPIE, ICO, OSA, the European Optical Society (EOS), Optics Within Life Sciences (OWLS), the IAEA, UNESCO and science programs across Europe. Currently, TSOSA is chaired by the ICO Secretary General, Angela Guzman.

**Item 3)** For the first time ICO has awarded the 2010 IUPAP Young Scientist Prize in Optics. The award has announced on January 2010 and it was publicized at the ICO official website and in a special article published in the ICO Newsletter, October 2010 issue. The first winner is Dr Eleftherios Goulielmakis, a 35-year-old research scientist at the Max Planck Institute of Quantum Optics in Garching, Germany, is the first recipient of the IUPAP Young Scientist Prize in Optics, administered by ICO. Dr. Goulielmakis was awarded the prize in recognition of his "outstanding contributions in attosecond physics, particularly for the generation of attosecond pulses and their application for the direct measurement of light waves". It is expected that Dr. Goulielmakis will deliver the Award Lecture along with the presentation of medal and cash at the next ICO General Conference, ICO-22, to be held in the city of Puebla (Mexico), next 15-19 August 2011. The ICO-22 is an IUPAP sponsored conference. The 2010 Gallieno Denardo Award was received by the Brazilian young scientist Cleber Mendonça, from the University of Sao Paulo. And the citation read: "for the development of novel methods and procedures of nonlinear optics, in particular the use of femtosecond pulses and femtosecond laser micro-fabrication in polymers for investigating nonlinear optical properties of organic compounds, and for establishing effective interdisciplinary collaborations within Brazil". The award ceremony took place last February 2010 at the occasion of the Winter College on Optics and Energy, ICTP, Trieste, Italy. The 2010 ICO Prize and the 2010 Gallieno Denardo Award will be announced at the occasion of the forthcoming ICO Annual Bureau Meeting, to be held in the Institute d'Optique, Palaiseau, France, next 30 October 2010.

**Item 4)** During the year 2010 an ICO Traveling Lecturer Program was carried out by Prof. Maxim Tomilin, from the National Research University of Information Technologies, Mechanics and Optics (University ITMO, Saint Petersburg, Russia), visited the Optics Research Center (CIOP-CONICET-La Plata-CIC) and UID Optimo, Engineering Faculty, National University of UNLP, La Plata, Argentina, under a visit organized by Prof. Hector Rabal. Prof. Tomilin delivered various conferences on liquid crystals characteristics and applications in optical microscopy.

**Item 5)** For the year 2010, celebrating the 50<sup>th</sup> Anniversary of the Laser, various special articles on the history and development of laser sources have been published at the ICO Newsletter. In addition to this action, ICO signed an agreement as a supporter of the LaserFest initiative from OSA and SPIE.

All the corresponding issues of the 2010 ICO Newsletter can be downloaded from:  
<http://www.ico-optics.org/newsletters.html>

**Item 6)** ICO is now involved as a co-sponsoring organization in the forthcoming ETOP, to be held for the first time in Africa, at the University of Tunisia, next July 2011.

**Item 7)** The forthcoming Information Photonics conference, belonging to the series of meetings held every two-three years, is now under an almost closed up organization by the National Research Council of Canada. It will take place next May 2011 in Ottawa. It is expected that by that occasion the Steering Committee will have the periodical technical meeting.

**Item 8)** The first ALOP program, supported by ICO, was held this year of 2010, in Peru, as an action of the ICO Secretariat. Organized by the Universidad Católica de Santa Maria it was addressed to high school teachers of the area of the city of Arequipa, located in the Northern department of Arequipa and lasted the first week of June 2010. The program was quite a successful one and it is expected to have continuity in 2011 in the Latin-American regions.

Maria L. Calvo

ICO President

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