



# NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE • INTERNATIONAL COMMISSION FOR OPTICS

## ICO becomes Scientific Associate of ICSU

**The International Commission for Optics has been accepted as an International Scientific Associate of the International Council for Science.**



ICO's Pierre Chavel, former secretary-general.

ICO is the global umbrella organization for 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 (ISA) 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 the International Union of Pure and Applied Physics (IUPAP). Optics still has its roots deeply in physics and this will remain so.

At the age of 58, ICO is moving ahead to better and more visibly fulfil its mission as “the place where the world of Optics meets”. It was elected an ISA at the ICSU general assembly in October 2005. This improves the recognition of optics as a discipline connected in many ways to all the other disciplines within science and technology. Let us explain why this is the case, and review what ICSU is and why the move is beneficial for ICO.

The International Council for Science has retained the acronym ICSU 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 to the global challenges that humanity 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 created in 1947, ICO's membership is primarily based on national membership, the Territorial Committee Members in 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 IUPAP. Within the ICSU structure, 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 Commissions, 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. This recognizes 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 50 Territorial Committee Members and six International Society Members. With this structure, ICO can fairly claim to be representing the whole field of optics on an international scale.

By becoming an ICSU ISA, ICO wants to make it clear that with the continuous development of science and technology in research and industry, the relationship 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 for Physics, which was awarded to Roy J Glauber, John L Hall and Theodor W Hänsch for outstanding upstream work in optics with practical implications.

ICO will keep its status as an IUPAP Affiliated Commission. Yet, large branches of optics have developed where scientists and engineers do not consider themselves physicists and are not considered as such by physicists. This applies, for example, to most work in optical systems and optical telecommunications. Optics courses and research activities at many universities are increasingly being promoted to fully 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. The recognition of ICO as an ICSU International Scientific Associate is a further step in that direction.

In this new position within the ICSU constellation, ICO will be an equal partner of the

other 25 or so ISAs, along with Water Resources, Geometry and Oceanic Resources, to name but a few. It will participate in the appropriate ICSU activities and 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, in line with a clear ICO priority, actions for supporting science and technology in regions of the world that require 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 ISA recognizes

ICO as a global organization, the primary international group that, especially through its members, coordinates the dissemination and advancement of scientific and technical knowledge in the broad fields of optics (by making contacts, providing expertise, offering a neutral international character, and so on). More importantly, it is a step forward for the recognition of the importance of optics for science and for society in the 21st century. ICO will strive to make the best use of this opportunity, and calls upon its members and the many parts of the optics community that they represent to join it and contribute new initiatives.

For more information see [www.ico-optics.org](http://www.ico-optics.org)  
**Pierre Chavel, ICO-ICSU Relations.**

## Moya-Cessa receives ICO/ICTP Award



Dr H M Moya-Cessa.



ICO president A Friberg (left), chair of the ICO/ICTP Award Committee A Wagué (centre) and winner of the ICO/ICTP Award H Moya-Cessa.

The annual ICO/ICTP Award ceremony took place on 1 February at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, during the Winter College. Héctor Manuel Moya-Cessa has been awarded the prize for 2006.

Dr Moya-Cessa was born in Acayucán, Veracruz, Mexico, in June 1966. He did a BSc at Universidad Autónoma Metropolitana in Mexico City then an MSc at Centro de Investigaciones en Optica in León, Guanajuato. In 1990 he went to England to study for a PhD at Imperial College London under the supervision of Prof. Peter L Knight.

He graduated in 1993 and got a research position at the Instituto Nacional de Astrofísica, Optica y Electrónica, in Puebla, Mexico. He has worked there ever since, with two sabbaticals – one in 1999 at the Università di Camerino, Italy, and the other 2005/2006 at the University of Ulm, Germany.

His research is on atom-field interactions in high-Q cavities, where he has shown that reconstruction of quasi-probability distribution functions can be achieved in the case of a dissipative cavity. In ion-laser interactions he has shown that the problem may be treated in a complete analytic form, even when

micro-motion is included. He has published more than 50 articles on these topics. Moya-Cessa is a member of the Mexican Academy of Sciences, a fellow of the Alexander von Humboldt Foundation and a regular associate of the ICTP.

Moya-Cessa has organized two international conferences, has been invited to present his work at more than 10 international conferences, and has been invited to deliver courses at Cuzco, Peru, and Tucson, Arizona, in the US. He was the invited editor of the June 2004 issue of *Journal of Optics B*.

The ICO/ICTP Award Committee has recognized the merits of Moya-Cessa – a young scientist achieving a great deal in his country of origin, which is considered a developing country by the UN. Moreover, the prize is awarded for his outstanding research activities on the foundations of quantum optics and for his involvement in organizational activities aimed at spreading interest in quantum optics around Latin America.

The ICO/ICTP Award Committee consists of A Wagué (chair), A Consortini (ICO), G Denardo (ICTP) and M Danailov (ICTP).

For more information see [www.ictp.it/pages/mission/prizes.html](http://www.ictp.it/pages/mission/prizes.html).

## Territorial Committees work for the World Year of Physics

**A summary of some of the activities of the ICO Territorial Committees celebrating the World Year of Physics 2005.**

The World Year of Physics (WYP), as declared by the UN in celebration of Einstein's *annus mirabilis*, has come to an end. It is now time to look back and analyse the impact of the activities organized by the world of optics and ICO in particular, not only in our community but also on spreading knowledge of optics through society. Here is a résumé of the activities that were reported by the ICO Territorial Com-

mittees and that were organized by their local initiatives. The list is not intended to be exhaustive.

● **Cuba** TECNOLASER 2005 took place in the Almendares Hall of the Hotel Kohly, City of La Havana, on 21–22 July. It was opened by the presidential board: J G Darias, president of the organizing committee of TECNOLASER 2005 and director of the Center of Tech-



Participants at the 1st International Workshop on Photoluminescence in Rare Earths: Photonic Materials and Devices, held in Trento, Italy, in May.



Exhibition of optical industries held at ICOL 2005 in Dehradun, India.



Lecture presentation at ICOL 2005 (Prof. Arthur Chiou, Yang-Ming University, Taipei).



Evening lecture at the 11th Engelberg Lectures in Optics, Switzerland, on 6–10 March 2005.

nological Applications and Nuclear Development (CEADEN); Tomás López, advisor to the chancellor of the University of Computer Sciences and collaborator of TECNOLASER; V L Fajer Avila, president of the Cuban Society of Physics (SCF); and O Morales, vice-president of the organizing committee of TECNOLASER 2005 and vice-director of CEADEN.

The event was sponsored by CEADEN and co-sponsored by ICO and the SCF. Bearing in mind the quantity and quality of the presentations, the organizers agreed to maintain the frequency of every other year for TECNOLASER. The next one will be on 17–19 May 2007.

● **India** The International Conference on Optics and Optoelectronics (ICOL) 2005 & XXXI Symposium of the Optical Society of India (OSI) was organized by the Instruments Research and Development Establishment (IRDE) in Dehradun on 12–15 December. J A R Krishna Moorthy was chair, A K Gupta was co-chair and Ashok Kaul was the convenor.

The aim of ICOL 2005 was to provide a wide forum for interaction and the exchange of ideas between scientists, engineers and researchers actively engaged in optics and optoelectronics. The conference featured technical sessions including plenary talks, invited lectures, oral and poster presentations, exhibitions, opportunities for networking and social events. The conference theme was “Optics and optoelectronics for strategic applications”.

ICOL 2005 was sponsored by India’s Defence Research and Development Organization (DRDO) and co-sponsored by ICO and OSA, and in co-operation with SPIE.

● **Italy** The 1st International Workshop on Photoluminescence in Rare Earths: Photonic Materials and Devices was held in Trento on 2–3 May under G C Righini’s initiative and sponsored by the Italian Society of Optics and Photonics (SIOF).

The workshop aimed to be a forum for material scientists, chemists and physicists to debate the state of the art and views on photonic materials based on rare earth ions. More than 60 experts attended the workshop from eight countries, who presented original contributions on both fundamental photoluminescence properties and application-oriented materials investigations. A special session was devoted to optical losses in low-phonon-energy glasses for infrared fibres.

All the participants appreciated greatly the informal atmosphere, the warm hospitality and the excellent scientific level, so it is very likely that the workshop will be organized again in 2007. Under the framework of the WYP the workshop also celebrated Einstein’s publication in 1917 of the basis of the theory of spontaneous and stimulated emission.

● **Japan** Many projects were planned in Japan

for the WYP. These were later adjusted by the Japanese Committee for the WYP, which comprised many Japanese academic societies related to physics. The projects were classified into eight categories: Physics Dialogue Projects, Physics Content Projects, Physics Instrument Projects, Physics Booklet Projects, Physics Friends Projects, International Relation Projects, and Publicity and Coordination. In relation to optics the Optical Society of Japan organized a special talk for WYP2005 at Optics Japan 2005, which was held in Tokyo on 23–25 November.

● **New Zealand** The 2005 Australasian Conference on Optics Lasers and Spectroscopy (ACOLS 2005) took place on 5–9 December in Rotorua. ACOLS 2005 is the region’s showcase of R&D in all aspects of optics, lasers and spectroscopy. ACOLS 2005 was the seventh conference in the ACOLS series and incorporated the 18th Australian Optical Society Conference, the 10th Australian Laser Conference and the 20th Australian Spectroscopy Conference.

Associated with this event was a satellite meeting. The New Zealand and Australian Quantum-Atom Optics Workshop took place from 29 November to 1 December in Queenstown. A technical exhibition was planned in conjunction with the conference. The aim of the organizers was to feature leading Australasian suppliers of equipment in the field of optics, lasers and spectroscopy.

● **Switzerland** The Swiss Society of Optics and Microscopy (SSOM), through the Workgroup on Biomedical Photonics, organized the 11th Engelberg Lectures on Optics. The chairs were G Delacrétaz, M Frenz, R P Salathé and M Wolf. The Engelberg Lectures are addressed to an interdisciplinary audience of physicists, engineers, computer scientists, physicians, biologists, and key industry players from all parts of Switzerland and neighbouring countries. The programme included speakers from scientific, technical and medical backgrounds.

There was also ample time for personal interaction with the speakers, a unique feature of the lecture series providing an opportunity to exchange ideas, make contacts and form collaborations. The talks were of a tutorial style, but highlighted new developments as well.

On the last day new technical developments were discussed, with special attention paid to those technical developments showing particular promise.

● **Tunisia** The Tunisian Optical Society (STO) planned for the WYP2005 with activities dedicated to the spread of information through workshops, schools and seminars at the national, regional (Africa) and international level. A school on active learning in optics and photonics was held from 26 March to 2 April in Monastir with 40 participants



The winners of the L'Oréal-UNESCO Award 2005 for women in science. The president of the Tunisian ICO Territorial Committee, Prof. Z Ben Lakhdar, can be seen at the far left.

(two from Algeria, two from Cameroon, six from Morocco, one from Ethiopia, one from South Africa and 28 from Tunisia). A résumé of that activity was presented at ETOP 2005 in Marseille, France, last October. A conference on photography was held by M Pelletier on 15 April. A seminar with high-school teachers took place on 20 April at OMRANE School and had 50 participants, and discussed physics education at secondary school – what is the best way to interest a class? Is optics a good way to introduce education in physics?

Various conferences were delivered by Z Ben Lakhdar (one of the winners of the L'Oréal-UNESCO Award 2005 for women in science) in different regions and on various subjects with the objective of enhancing interest in physics and encouraging young people to join the physics community.

● **Ukraine** The 7th International Conference on Correlation Optics was held on 6–9 September in Chernivtsi. This conference, chaired by O Angyelsky, is biannual and began in 1993. Participants from 17 states took part in this meeting and presented reports on the hot topics of modern optics, such as the

informative content of statistical optical fields (including optical chaos and singular optics), optical correlation devices based on diffractive optical elements, including optical and digital holography, fractal optics and optical sensors, optical correlation diagnostics, interferometry and microscopy of rough surfaces and random media, and new applications of correlation optics in biology and medicine.

The conference programme included 28 invited lectures, 28 oral presentations and 77 poster presentations. Contributions from abroad totalled 31.5%. The conference was organized by ICO, OSA, SPIE, SPIE Ukraine, SPIE Russia, Ukrainian Optical Society, Chernivtsi National University, Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Ukrtelecom and Bukovinian State Medical University.

Another event was the VI International Young Scientists Conference: Optics and High Technology Material Science (SPO 2005), held at Kyiv National University, under the initiative of SPIE Ukraine Chapter. The event was supported by ICO, and the organizers have published the abstracts from the conference.

## Contacts

International Commission for Optics ([www.ico-optics.org](http://www.ico-optics.org)).

### Bureau members (2005–2008)

**President** A T Friberg

**Past-president** R Dändliker

**Treasurer** A Sawchuk

**Secretary** M L Calvo, Departamento de Óptica, Universidad Complutense, 28040 Madrid, Spain. E-mail: [mlcalvo@fis.ucm.es](mailto:mlcalvo@fis.ucm.es).

**Associate secretary** G von Bally

**Vice-presidents, elected** S N Bagayev, A M Guzmán, G F Jin, B Y Kim, M Kujawinska, H Lefèvre, J Love, I Yamaguchi

**Vice-presidents, appointed** M Gu (OWLS), I C Khoo (IEEE/LEOS), G Sincerbox (OSA), P Stahl (SPIE), A Wagué (LAM), EOS representative to be appointed

**Senior adviser (ad personam)**

P Chavel

**IUPAP Council representative**

Y Petroff

## Forthcoming events with ICO participation

Below is a list of events with ICO participation coming up in 2006. For more information see [www.ico-optics.org/events.html](http://www.ico-optics.org/events.html).

### 19–20 April 2006

**Optique '06**. Rabat, Morocco. Contact: Prof. Esmail Ahouzi. E-mail: [ahouzi@inpt.ac.ma](mailto:ahouzi@inpt.ac.ma). Web: [www.inpt.ac.ma/~optique06/indexoptique06\\_archivos/Page871.htm](http://www.inpt.ac.ma/~optique06/indexoptique06_archivos/Page871.htm).

### 5–7 June 2006

**5th International Workshop on Information Optics**. Toledo, Spain. Contact: Dr G Cristóbal. E-mail: [gabriel@optica.csic.es](mailto:gabriel@optica.csic.es). Web: [www.iv.optica.csic.es/wio-06/WI0062.htm](http://www.iv.optica.csic.es/wio-06/WI0062.htm).

### 28–31 August 2006

**International Conference “Micro to Nano-Photonics – ROMOPTO 2006”**. Sibiu/Hermannstadt, Romania. Contact: Prof. VI Vlad. E-mail: [vlad@nipne.ro](mailto:vlad@nipne.ro).

### 4–7 September 2006

**ICO Topical Meeting on Optoinformatics 2006/ Information Photonics 2006**. Saint Petersburg, Russia. Contact: Dr Ekaterina Yutanova. E-mail: [Pavlov@soi.spb.ru](mailto:Pavlov@soi.spb.ru). Web: <http://ysa.ifmo.ru/tmo2006/>.

### 26–29 October

**7th Int'l Young Scientists Conference “Optics and High Technology Material Science SPO 2006”**. Kiev, Ukraine. Contact: Dr Viktor O Lysiuk. E-mail: [lysiuk@univ.kiev.ua](mailto:lysiuk@univ.kiev.ua).

### 13–17 November 2006

**1st Andinean and Caribbean Conference on Optics and its Applications**. Santiago de Cali, Colombia. Contact: Prof. E Solarte. E-mail: [esolarte@calima.univalle.edu.co](mailto:esolarte@calima.univalle.edu.co).

### 3–10 December 2006

**8th LAM Workshop on Physics and Applications of Lasers**. Addis Ababa, Ethiopia. Contact: A Asfaw. E-mail: [araya@phys.aau.edu.et](mailto:araya@phys.aau.edu.et).

### 6–8 December 2006

**5th International Conference on Optics – Photonics Design and Fabrication ODF '06**. Nara, Japan. Contact: Prof. Tsuyoshi Hayashi. E-mail: [hayashi@pac.ne.jp](mailto:hayashi@pac.ne.jp). Web: [www.odf.jp/in.html](http://www.odf.jp/in.html).

### 12–16 December 2006

**8th International Conference on Optoelectronics, Fiber Optics and Photonics**. Hyderabad, India. Contact: Prof. D N Rao. E-mail: [dnrsp@uohyd.ernet.in](mailto:dnrsp@uohyd.ernet.in).

Responsibility for the accuracy of this information rests with ICO. President: Professor Ari T Friberg, Royal Institute of Technology, Optics, Electrum 229, SE-164 40 Kista, Sweden; e-mail: [ari.friberg@imit.kth.se](mailto:ari.friberg@imit.kth.se). Associate Secretary: Gert von Bally, Laboratory of Biophysics, Medical Centre, University of Münster, Robert-Koch-Str. 45, D-48129 Münster, Germany; e-mail: [lbiophys@uni-muenster.de](mailto:lbiophys@uni-muenster.de).

