NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE ● INTERNATIONAL COMMISSION FOR OPTICS

ICO '04 proves to be a great success

The ICO International Conference on Optics and Photonics in Technology Frontier took place in Japan last summer.

Organized by the Optical Society of Japan (OSJ) and the ICO, the ICO 2004 International Conference on Optics and Photonics in Technology Frontier was held in Makuhari Messe, Chiba, Japan, on 12–15 July last year.

ICO meetings are held in Japan every 10 years (1964, 1974, 1984 and 1994). Hence the ICO Bureau gave its approval to the OSJ and the ICO Territorial Committee of Japan to hold an ICO meeting there in 2004.

The meeting was held jointly with Optics-Photonics Design and Fabrication (ODF '04) and the International Conference on Sensing and Nanotechnology (ICOSN '04). These are well known international technical meetings run by the OSJ. ICO '04 was co-located with InterOpto '04, which had about 12 000 participants and was organized by the Optoelectronic Industry and Technology Development Association (OITDA).

The interaction between scientific and industrial activities stimulates technical progress and our aim was to promote this great advantage. The programme consisted of three main body sessions: ODF, ICOSN and Biomedical Optics with Quantum Electronics and Lasers.

The meeting was a great success with 510 participants, nearly a fifth from 28 countries overseas: Australia, Austria, Belgium, Canada, China, Denmark, Ecuador, Finland, France, Germany, India, Iran, Israel, Japan, Korea, Kyrgyz, Latvia, the Netherlands, Norway, Poland, Portugal, Russia, Singapore, Switzerland, Taipei China, Turkey, the UK and the US. There were three plenary talks by E Wolf, T Yanagida and J Wyant, 62 invited papers, 72 oral papers, 172 poster papers and seven post-deadline papers, despite the difficult economic situation worldwide. These facts confirm again that international collaboration and competition lead to progress in this field. Thanks to all the participants, co-operating organizations and members of the executive committee who made the meeting such a success.

Progress in optics and photonics is occurring dramatically, especially for applications in information and communication technologies, and new areas in nano- and bio-technologies are also growing rapidly. ICO '04 proved to be an excellent international forum for people to exchange ideas and achievements through original paper presentations and discussions of scientific and industrial topics related to optics and photonics in the fields of design, simulation, fabrication and testing, and components such as those used in information optics, fibre communications, bio-photonics, storage, measurement, cameras, microscopy, lithography, printing and 3D displays.

Some of the participants at the ICO Topical Meeting 2004, which was held in Chiba, Japan, in July.

In addition an informal meeting took place on 13 July, between ICO Bureau members attending the conference and representatives of the local organizers and the OSJ. Ichirou Yamaguchi explained briefly the membership and activities of the ICO, and reported recent news. Forthcoming events for the ICO were also presented.

There was some discussion of the celebration of the topical meetings to be held in 2006 and 2007. Various Territorial Committees are studying proposals for defining topics and locations. An announcement about the 2006 meeting should be issued by the end of this year.

Other subjects of discussion related to the activities of ICO Committees and their role in standards. Some of the participants from industry pointed out difficulties in making connections with academic activities.

The ICO's motivation for supporting optics and photonics in developing countries met with understanding and approval. After the present status and plans of the European Optical Society were described, participants discussed how to promote closer collaboration between Asian countries through meetings and the exchange of scientists and students.

A more detailed report will appear in the Green Book *Toward ICO-20* (due June 2005).

Yoshiki Ichioka, organizing committee chair; Kimio Tatsuno, steering committee chair; Toyohiko Yatagai, programme committee chair.

Belic and Saloma share Galileo Galilei award 2004

An insight into leading optics activities in a global community.

Prof. Milivoj Belic (above) and Prof. Caesar Saloma (below).

Every year ICO awards the Galileo Galilei medal to scientists who have made outstanding contributions to the field of optics under comparatively unfavourable circumstances. The 2004 award went to Prof. Milivoj Belic and Prof. Caesar Saloma.

Belic was born in 1951 in what was then Yugoslavia. In 1975 he left to pursue graduate studies at the City College of New York in the US. He obtained his PhD degree in 1980, under Joel Gersten and Melvin Lax. In 1981 he returned to Yugoslavia and accepted a junior position at the Institute of Physics, Belgrade. He has remained with the Institute ever since.

Belic's research interests centred on optics from the beginning, particularly on nonlinear optics and the nonlinear dynamics of optical systems. His work in nonlinear optics was concerned with wave mixing, optical computing and spatial solitons.

In nonlinear dynamics, Belic's work involved the development of optical instabilities and chaos, transverse pattern formation and the dynamics of defects. In other areas, such as condensed-matter physics, he worked on photorefractive materials and defects. In computational physics he was instrumental over a span of three decades in developing ever more sophisticated numerical algorithms for the treatment of systems of PDE in space and time.

Although his work in Yugoslavia was carried out using very limited resources, Belic succeeded in obtaining exact analytical solutions to various two-wave and four-wave mixing arrangements in photorefractive media. In the 1990s his interest shifted to phase conjugate oscillators, and he formulated working conditions for these devices and applied them to optical computing.

During the past few years Belic has introduced and demonstrated, with the help of experimental colleagues, the existence of counter-propagating 2D vector solitons and bidirectional waveguides in SBN crystals. Currently he is concerned with the dynamics of counter-propagating solitons and self-trapped beams in saturable non-local media.

His most important contribution to date is the establishment and maintenance of a strong research group in Belgrade, working under adverse conditions yet producing outstanding results. The initial years of political unrest were followed by economic breakdown and hyper-inflation, sanctions and deteriorating conditions: times with no electricity, heating or gas, food shortages and falling bombs. It was difficult to do physics when the order of the day was physical survival. Yet, over the years Belic produced a steady stream of high-quality papers which were published in the leading physics journals. He is currently a visiting professor at the Texas A&M University at Qatar in Doha.

Saloma is a professor of physics at the National Institute of Physics of the University of the Philippines in Diliman, Quezon City. Between 1987 and 1989 he was at the Department of Applied Physics, Osaka University, to perform research for his PhD dissertation under the supervision of Shigeo Minami and Satoshi Kawata. His work dealt with temporal coherence control of semiconductor lasers as light sources in optical microscopy.

In 1989 Saloma returned to the University of the Philippines as an assistant professor and started a research group in optical microscopy and signal processing. In 1994 he spent a year at the Osaka National Research Institute on a postdoctoral fellowship from the Science and Technology Authority of Japan, where he worked on the use of optical feedback detection in optical microscopy.

In 1996 Saloma became a visiting professor at the Institute of Molecular and Cellular Biology of Osaka University and worked with Hisato Kondoh on the use of the laser fluorescence confocal microscopy in imaging optically thick biological samples.

Saloma has also investigated the efficiency of laser confocal microscopy and multi-photon excitation microscopy for imaging applications in highly scattering media. He collaborated with Satoshi Kawata on studying the potential use of two-photon fluorescence microscopy for observing biological samples in turbid media.

Saloma and his team are now using a home-built hydrogen Raman shifter as a light source for two-colour (two-photon) fluorescence excitation and the two-colour generation of optical beam-induced current in semiconductor devices. Together with engineers from Intel Technology Philippines, he is developing new ways of detecting defects in backside integrated circuits. His team is also collaborating with marine biologists in the Philippines on classifying coral reefs and sea grasses by remote sensing.

To date, Saloma has successfully trained 10 PhD students at the University of the Philippines. In 2000 he became director of the National Institute of Physics and is currently serving his second term until 2006. He has been working on ways to improve the quality and efficiency of its graduate-school programmes. His efforts recognize that talented young Filipinos migrate to developed countries because of the lack of viable graduate schools in the Philippines, where there are fewer than 100 holders of PhDs in physics.

Saloma was president of the Physical Society

of the Philippines from 1997 to 2000. He is currently a council member of the Association of Asia-Pacific Physical Societies. He is also an associate member of the Abdus Salam International Centre for Theoretical Physics and a member of the Optical Society of America.

The call for the ICO Galileo Galilei Award 2005 is still open (deadline 15 April 2005). Colleagues interested in making nominations or obtaining information can visit www.ico-optics.org/awards.html.

The Award Committee consists of Gert Von Bally (chair), Anna Consortini, Henryk Kasprzak, Serguey Odoulov and Maria J Yzuel.

Workshop covers wide range of subjects

An international workshop proved to be an ideal forum for the exchange of ideas.

Some of the participants of the International Workshop on Optoinformatics, held in St Petersburg, Russia, in October.

The International Workshop on Optoinformatics was held at the State University for Information Technologies, Mechanics and Optics in St Petersburg, Russia, on 18–21 October 2004.

The second edition of this series of workshops was organized inside the Third International Conference on Basic Problems of Optics, a major meeting that takes place every two years, under the initiative of the above mentioned university, the Vavilov State Optical Institute, Lomonosov Moscow State University, St Petersburg State University, the section "Optics", the House of Scientists of the Russian Academy of Science in St Petersburg, the Ioffe Physico-Technical Institute and the St Petersburg Committee of Science and Higher Education.

The International Workshop on Optoinformatics, with the theme "Optics meets Оптика", received 38 communications, with two invited conferences, 24 oral presentations and 12 posters including a five-minute oral presentation of the poster contents. These works were signed by a total of 113 authors from various regions and countries: Armenia, Austria, France, India, Japan, Kyrgyzstan, Latvia, Malaysia, Mexico, China, Poland, Romania, Russia, Serbia and Montenegro, Spain, Sweden, Ukraine and the US.

Subjects covered a broad area within the application of optics to informatics; quantum information processing; optoelectronic devices for signal treatment and optical communications; chaos and encryption; the processing of visual information and complex biological systems; optical coherence tomography; nonlinear information processing and laser-beam characterization.

Because of the current difficulties in travelling internationally faced by many scientific groups, attendance was not as high as was expected or desired. Nevertheless, an active and fruitful atmosphere for discussion and the exchange of information was created and appreciated by the organizers and participants.

All the attendees agreed that this series of workshops is of interest and should be continued inside the main focus on optics and informatics. The chancellor of the State University for Information Technologies, Mechanics and Optics, Prof. I Vasilèv, provided all the necessary support and facilities to ensure the success of the event.

During this workshop, the ICO secretary, M L Calvo, also visited the Optics Section of the Russian Academy of Science in Moscow and was told about the current activities of the Russian Territorial Committee, presided over by Eugene Zolotov. He also visited various laboratories dedicated to optical information processing and micro-optics, which have recently had excellent scientific achievements.

The ICO endorses and supports these activities and wants to provide the support needed to enhance their impact. The proceedings of the workshop have been edited in English by St Petersburg State University, together with those from the Third International Conference on Basic Problems of Optics (in Russian). There are still some copies of the proceedings available; to request one please e-mail the writer (alexandervpavlov@mail.ru).

Alexander V Pavlov, co-chair.

Aurelio Oliva Viera: a terrible loss

On 3 January 2005 Aurelio Oliva Viera died in La Havana City, Cuba, from an acute respiratory problem.

Aurelio Oliva Viera ("Yeyo" to his friends) was a physicist who for years was greatly dedicated to the activities of optics in Cuba, investing his time, effort and intelligence.

Oliva graduated from La Havana University in 1972. Later he received an MSc in optics and lasers from Havana Polytechnic Institute José A Echeverria (ISPJAE). In 1975 he visited Russia as part of a programme of scientific collaboration and training at the Ioffe Institute in St Petersburg. At the laboratory of holography and optolectronics, he worked with S B Gurievich and later with Yuri Denysiuk, and he specialized in holography and holographic interferometry.

Back at La Havana he carried out applied research at Cuban centres dedicated to the design and implementation of instrumentation

Aurelio Oliva Viera.

for industrial and biomedical applications, such as ININTEF (*Instituto de Investigaciones Técnicas Fundamentales*, the Institute for Research in Fundamental Techniques) and CEDEIC (*Centro para el Desarrollo de Instrumentación Científica*, the Centre for the Development of Scientific Instrumentation).

As an example of Oliva's contribution, he was part of the the team working on the design of medical instrumentation for laser therapy, which led to a commercial spin-off not only in Cuba but also in some European and Latin American countries. He collaborated for many years with the Cuban Ministry of Public Health on standardizing the use of laser equipment in medical applications.

Oliva was one of the pioneer physicists in Cuba who early in 1993 contacted ICO representatives to form the Cuban Territorial Committee, of which he was president until 2001. He was also very active in the organization of activities at the Cuban Physical Society, of which he became president of the optics and spectroscopy section, and at the Cuban Academy of Science.

Oliva also collaborated with the ICO on the Travelling Lecturer Programme, and enhanced the presence of optics in the Caribbean region by organizing many professional events. In the last few years he was involved in a company that installed solar-energy panels in rural areas of Cuba.

Aurelio Oliva Viera was not only a talented person with a very pleasant personality. He was also very generous and always ready to work to provide his energy and knowledge for the development and achievement of a more equal society. Physics in Cuba, and especially the optics community, has suffered a great loss. We will miss him greatly.

Angel Augier, president, ICO Cuban Territorial Committee.

Contacts

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

Bureau members (2002–2005)

President R Dändliker
Past-president A H Guenther
Treasurer G T Sincerbox
Secretary M L Calvo, Departamento de Óptica, Universidad Complutense, 28040 Madrid, Spain. E-mail: mlcalvo@fis.ucm.es.
Associate secretary A T Friberg
Vice-presidents, elected
A A Friesem, N Gaggioli, G F Jim, B Y Kim, M Kujawinska, G C Righini, L Wang, I Yamaguchi
Vice-presidents, appointed
H H Arsenault (SPIE), G von Bally (OWLS), A Sawchuck (OSA), T Tschudi (EOS), A Wagué (LAM Network), A M Weiner (IEEE/LEOS)
Senior adviser (ad personam)
P Chavel
IUPAP Council representative
Y Petroff

Forthcoming events with ICO participation

26 March – 4 April 2005
Workshop on Active Learning in Optics and Photonics
Monastir, Tunisia. Contact: Zohra Ben Lakhdar. E-mail: zohra.lakhdar@fst.rnu.tn.

2–6 May 2005
9th International Conference on Squeezed States and Uncertainty Relations (ICSSUR '05)
Besancon, France. Chair: Dr Michel Planat. E-mail: planat@lpmo.edu. Web: www.lpmo.edu/~laude/icssur/.

8–13 May 2005
10th Congress of the International Colour Association (AIC Colour '05)
Granada, Spain. Contact: Javier Romero. E-mail: jromero@ugr.es. Web: www.ugr.es/local/aic05/.

6–8 June 2005
Information Photonics 2005
Charlotte, North Carolina, USA. Contact: Naomi Chavez. E-mail: nchave@osa.org. Web: www.osa.org/meetings/topicals/AO_COSI_IP_SR/.

8–11 June 2005
Photonics Prague 2005
Contact: Pavel Tomanek. E-mail: tomanek@feec.vutbr.cz. Web: http://prague.photon-czsk.org.

21–26 August 2005
ICO-20, Triennial Congress of the International Commission for Optics: "Challenging Optics in Science and Technology"
Changchun, China. Contact: Jianlin Cao. E-mail: caojl@ciomp.ac.cn. Web: www.conference.ac.cn/ico20.html.

6–9 September 2005
7th International Conference on Correlation Optics, Chernivtsi, Ukraine
Contact: Oleg V Angelsky. E-mail: oleg@optical.chernovtsy.ua. Web: www.itf.cv.ua/corropt05/.

5–7 October 2005
Multiple Scattering Lidar Experiment (MUSCLE XIV)
Quebec City, Canada. Contact: Dr Gilles Roy. E-mail: gilles.roy@drdc-rddc.gc.ca.

17–20 October 2005
International Topical Meeting on Optoinformatics
St Petersburg, Russia. Contact: Dr Ekaterina Yutanova. E-mail: conf_optics@mail.ifmo.ru. Web: http://ysa.ifmo.ru/tmo2005/.

24–26 October 2005
9th International Conference on Education and Training in Optics and Photonics (ETOP)
Marseille, France. Contact: Serge Ungar. E-mail: serge.ungar@popsud.fr. Web: www.ETOP2005.org/.

12–15 December 2005
International Conference on Optics and Optoelectronics (ICOL 2005)
Dehradun, India. Contact: J A R Krishna Moorty. E-mail: krish@irde.res.in. Web: www.icol2005.com.

Responsibility for the accuracy of this information rests with ICO. President: Professor René Dändliker, Institute of Microtechnology, University of Neuchâtel, CH-2000 Neuchâtel, Switzerland. Associate Secretary: Professor Ari T Friberg, Royal Institute of Technology, Optics, Electrum 229, SE-164 40 Kista, Sweden; e-mail: ari.friberg@imit.kth.se.