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## ICO Newsletter

### April 2000, No. 43

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#### International Commission for Optics.

Bureau members : President : A.H. Guenther; Past-President : T. Asakura ; Treasurer : G.T. Sincerbox; Vice-Presidents, elected : Vice-Presidents, elected : M.L. Calvo, R. Dändliker, A.A. Friesem, J. Ojeda-Castañeda, U. Kim, G.C. Righini, C. Sheppard, L. Wang; Vice-Presidents, appointed : H.H. Arsenault (SPIE), D.A.B. Miller (IEEE/LEOS), B.E.A. Saleh (OSA), T. Tschudi (EOS); Associate Secretary, in charge of Meetings : A.T. Friberg.

#### International Commission for Optics

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### ***Fourth ICTP/ICO/OSA Winter College on Optics and Photonics held at Trieste, February 2000***



The Abdus Salam International Centre for Theoretical Physics in Miramare - Trieste in Italy is a center established by UNESCO with the support of the Italian government to host selected physicists from developing countries. During their stay, the guests can conduct research, have access to first-rate library and laboratory resources, and attend meetings and schools. As part of its program to support optics in less favored regions of the world, ICO has been collaborating with ICTP on organizing Winter Colleges on Optics for several years. The fourth such Winter College on Optics and Photonics, now for the first time also in collaboration with OSA, was held at Trieste February 7-25, 2000. The College was jointly directed by Prof. Ari T. Friberg (Royal Institute of Technology, Stockholm, Sweden), Prof. Ajoy Ghatak (Indian Institute of Technology, New Delhi, India), Prof. Franco Gori (Università degli Studi Roma Tre, Rome, Italy), and Prof. Glenn Sincerbox (University of Arizona, Tucson, AZ, USA). Prof. Gallieno Denardo (ICTP and University of Trieste, Italy) served as the local organizer.

About 25 lecturers and 80 participants attended the College, which included lectures in selected topical areas, seminars on current research subjects, laboratory exercises, internet activities, demonstrations, and communications by the participants. In broad terms the lectures covered the following fields: fiber optics and guided waves; micro-optics and nanostructures; physical and quantum optics and electromagnetic beams; nonlinear optics and new lasers; optical data storage; geometrical optics and optical design. Examples of seminars are blue lasers, quantum encryption, and nonlinearities in telecommunication fibers. There were four hands-on laboratory experiments carried out in several afternoon sessions: laser beam characterization and electronic speckle-pattern interferometry (both from Università Roma Tre), erbium-doped fiber amplifier (Institut d'Optique, Orsay), and a nonlinear laser-optics laboratory in connection with a tour of the Synchrotron Radiation Facility Elettra in Trieste. The internet activities included Stanford CyberLab experiments and WebTOP 3D optical system simulations (done locally but accessible over the net from Mississippi State University). Among the demonstrations was enhanced backscattering in double passage across a rotating ground glass plate. The communications by the participants were, as usual, part of the ICTP LAMP (Laser, Atomic, and Molecular Physics) network and they were received with enthusiasm. Every student had an opportunity to give a 20 minute oral talk or poster presentation of his/her own research.

The first ICTP/ICO Prize, established last year to recognize outstanding work done by young researchers in developing countries, was given by Prof. Anna Consortini, in an award ceremony during the College, to Dr. Ahmed Ali Khan from Quaid-I-Azam University in Islamabad, Pakistan, in recognition for his work at an international level in optical computing and for having contributed to co-operation projects between the academic and the industrial sector in his country. The Winter College was followed by a smaller, 1-week training course on Optical Design and Optimization, organized by the International Centre for Science and High Technology (ICS), Trieste. The two events shared a common lecturer on optical design and all participants of the training course also attended the College.

The four ICTP/ICO Winter Colleges on Optics held so far (in 1993, 1995, 1998, and now in 2000 in association with OSA) have been most successful in bringing together scientists from a particularly large number of countries from all continents and in promoting collaborations. This activity constitutes one of the priority

objectives of ICO: contribute to international development of research in pure and applied optics with special attention to those parts of the world where conditions are difficult. It is hoped to be able to continue this series.

ICTP/ICO/OSA Colleges are open to scientists from all countries of the world that are members of the UN, UNESCO, IAEA, or UNIDO. The main purpose of the Abdus Salam ICTP in Trieste Miramare is to help research workers from developing countries, but graduate students and post-doctoral scientists from developed countries are also welcome to attend. As the Colleges are conducted in English, participants should have an adequate working knowledge of that language. As a rule, travel and subsistence expenses of the participants from developed countries should be covered by their home institutions. However, funds are available through ICTP to support participants from developing countries who will be selected by the organizers. Such financial assistance is available only to those who attend the entire activity. As scarcity of funds does not allow travel support to be granted in all cases, every effort should be made by the candidates to secure funding for their fares (or at least half-fares) from their home country. So far, there have been no registration fees for attending the Colleges.

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### ***First ICO/ICTP award presented to Arbab Ali Khan***



The first winner of the newly established ICO/ICTP award is Dr. Arbab Ali Khan. As an additional program in their long standing cooperation, the International Centre for Theoretical Physics (ICTP) of UNESCO in Trieste, Italy, and ICO have established this award in order to recognize a researcher under 40 years of age from a developing country. It consists of a cash award donated by ICO and an invitation from ICTP to attend the next ICTP event appropriate for the recipient's field of interest. In addition, the winner is invited to deliver a lecture during that event.

The first recipient of the award Dr. Arbab Ali Khan worked mainly in the field of quantum computing. He designed quantum logic gates for quantum computers based on Bragg scattering of atomic waves from cavity field states. He is now interested in implementing his ideas of quantum computing and quantum teleportation while working in Sweden as it is not possible for his country to afford the expenses and establish the laboratory facilities. Most of his work has already been published and recognized by others. He has also represented his country in several national and international conferences. Dr. Khan has also worked in the fields of optical and computer generated holography, fiber and integrated optics and in lasers and optics instrumentation

implementing optical computing via classical methods. In addition, he has considerable experience in the field of neural network models that play an important role in random media inverse scattering and in optical tomography and photon migration. In general he has contributed significantly to various co-operation projects in optics and laser technology between the academic and industrial sectors. His interests also include industrial research and development, optical micro- and nano-technologies, optical design, imaging and visual optics. He believes in doing physics for the welfare promotion of society.

Dr. Khan did his M. Sc., in the field of electronics, M. Phil., in optical computing by classical methods and his Ph.D. work is mainly in the field of quantum computing. He received all his degrees from Quaid-i-Azam University Islamabad, Pakistan, where he is now working as assistant professor.

The recipient delivered his award lecture during the ICO/ICTP/OSA Winter College on Optics and Photonics in Trieste on February 18, 2000 and received his award during the ICO hosted reception there. The award committee consists of two representatives from ICTP and two from ICTP: during the period 1999-2002, these are Prof. G. Denardo of Università di Trieste and Dr. M. Danailov of Synchrotrone Trieste for ICTP, Prof. A. Consortini of Università di Firenze, a former ICO President, and Prof. A. A. Friesem of Weizmann Institute, Israel, ICO vice-president and chairman of the Committee, for ICO. More details on the program can be found on the [ICO Web page](#).

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### ***News from ICO Members Worldwide***

Together with some brief news from several Territorial Committee members, this issue of the Newsletter contains a description of the history and activities of the Territorial Committee in Cuba. The ICO Secretariat always welcomes such contributions for inclusion in the Newsletter.

#### **Denmark :**

The Danish Optical Society, DOPS, which is also the Danish Territorial Committee of ICO has elected Mr Bjarne Tromborg as its President.

#### **France :**

Last September in Bordeaux, during Horizons de l'Optique, its biennial meeting, the French Optical Society elected its new Board, which is also the French Territorial Committee for Optics for ICO. The new Board has now started activity on a two years term. Its members are J.M. Jonathan (Institut d'Optique/CNRS), President ; J.M. Maisonneuve (ONERA, Toulouse), Past - President ; D. Dolfi (Thomson CSF LCR), Vice - President ; M. Stehlé (consultant), Treasurer ; J. Cornillaut (consultant), Secretary ; J.J. Aubert (CEA CENG DLETI), J. Berthon (CNES, Toulouse), A. Brun (Institut d'Optique/Univ. Paris XI), R. Frey (Ecole Polytechnique/CNRS), J.P. Goure (consultant), J. Jerphagnon (Alcatel), J.L. Mercier (Essilor), C. Puech (Angénieux). M. J.J. Contet (Optique Fichou) is the representative of the Groupement des Industries Françaises de l'Optique and M. J.M. Nunzi (CEA, Saclay) is the representative of the French Physical Society.

#### **Turkey :**

The new ICO Territorial Committee for Turkey consists of Professors Ali Serpengüzel of Koç University, Istanbul, President ; Ekmel Ozbay, Vice President in charge of finance, and Alphan Sennaroglu, Vice President.

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### ***Forthcoming events with ICO Participation***

10-14 April 2000

#### **ICO Topical Meeting, Optical Science and Applications for Sustainable Development**

Dakar, Senegal  
Prof. Ahmadou Wague, Université C.A.D.  
Departement de Physique, Dakar, Senegal  
fax +221 8 246318, [wague@smtp.refer.sn](mailto:wague@smtp.refer.sn)

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4-5 June 2000

#### **Dennis Gabor Memorial Conference**

Budapest, Hungary  
Dr. G. Lupkovics, OPAKFI, H-1027 Fö u. 68  
Budapest, Hungary  
tel./fax. +36 1 202-0452, [gdmemo@mtesz.hu](mailto:gdmemo@mtesz.hu)  
<http://www.omikk.hu/gaborden/emlekbiz.htm>

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18-23 June 2000

#### **OC'2000, Optics in Computing**

Quebec City, Canada  
Dr. Tigran Galstian, Physics Dept., Laval Univ.  
Pav. A-Vachon, Cite Univ., Quebec, G1K 7P4  
fax +1 418 656-2623, [galstian@phy.ulaval.ca](mailto:galstian@phy.ulaval.ca)  
<http://www.oc2000.ulaval.ca/>

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4-7 September 2000

**RomOpto 2000 (6th Conference on Optics)**

Bucharest, Romania  
Prof. V.I. Vlad, Institute of Atomic Physics  
NILPRP - Dept. of Lasers, P.O. Box MG-36  
R-76900 Bucharest, Romania  
fax. +40 1 423 1791, [vlad@ifin.nipne.ro](mailto:vlad@ifin.nipne.ro)

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15-17 November 2000

**Intl. Conf. on Optical Design and Fabrication**

Tokyo, Japan  
Dr. Kimio Tatsuno, Central Res. Lab., Hitachi Ltd.  
1-280 Higashi-koigakubo, Kokubunji, Tokyo  
fax. +81 42 327-7673, [tatsuno@crl.hitachi.co.jp](mailto:tatsuno@crl.hitachi.co.jp)

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3-7 September 2001

**IV RIAO / VII OPTILAS**

Tandil, Argentina  
Prof. G.H. Kaufmann, Inst. de Fisica Rosario  
(CONICET-UNR), Bv. 27 de Febrero 210 bis  
2000 Rosario, Argentina  
fax. +54 341 482-1772  
[guille@ifir.ifir.edu.ar](mailto:guille@ifir.ifir.edu.ar)

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9-14 September 2001

**ICO Topical Meeting, Optical Trends in Information, Communication, and Storage**

Jerusalem, Israel  
Prof. Asher A. Friesem, Department of Physics of Complex Systems, Weizmann Institute of Science  
Rehovot 76100, Israel  
fax. + 972 8 934 4109 [friesem@wicc.weizmann.ac.il](mailto:friesem@wicc.weizmann.ac.il)

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27-30 November 2001

**7th Conf. on Education and Training in Optics and Photonics (ETOP) 2001**

Singapore  
Dr. Tuan-Kay Lim, School of Electrical and Electronic Eng.  
Nanyang Tech. University  
Nanyang Ave., Singapore 639798  
fax. +65 791 2687/792 0415  
[etklim@ntu.edu.sg](mailto:etklim@ntu.edu.sg)

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25-31 August 2002

**ICO-19, Triennial Congress of the International Commission for Optics**

"Optics for the Quality of Life"  
Florence, Italy  
Dr. Giancarlo C. Righini, IROE "N. Carrara" - CNR  
Via Panciatichi 64, 50127 Firenze, Italy  
fax. +39 055 412878  
[righini@iroe.fi.cnr.it](mailto:righini@iroe.fi.cnr.it)

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***[Petroff](#), [Saleh](#), [Tschudi](#) join ICO Bureau as Vice-Presidents***



Members of the ICO Bureau were photographed during their meeting on August 6, 1999 in San Francisco, with both the old (1996-1999) and the new (1999-2002) bureau members. From from left to right, seated : T. Asakura, K. Chalasinska-Macukow, A.H. Guenther, A. Consortini ; standing : R.R. Shannon, G.T. Sincerbox, P. Chavel, J. Ojeda-Castaneda, F. Merkle, R. Dändliker, M.C. Hutley, G.C. Righini, A.T. Friberg, L.L. Wang, G. von Bally, C.J.R. Sheppard, A.A. Friesem, T. Tschudi, D.A.B. Miller

After a new membership category in ICO has been introduced for Membership Societies with international activity in Optics, the European Optical Society (EOS), the IEEE Laser and Electro-Optics Society (IEEE/LEOS), the Optical Society of America (OSA) and SPIE - the International Society for Optical Engineering are now members of ICO. Each International Society Member designates its representative to the ICO Bureau, who has the title of ICO Vice-President and joins the eight ICO Vice-Presidents elected in that capacity by the Territorial Committee Members. After IEEE/LEOS appointed D.A.B. Miller of Stanford University and SPIE appointed H.H. Arsenault of Université Laval, Québec as their respective ICO Vice-Presidents, the EOS has now appointed its own President-Elect T. Tschudi of Technische Hochschule Darmstadt and OSA has appointed B.E.A. Saleh of Boston University.

In addition, ICO has been happy to learn that the President Elect of the its parent organization, the International Union of Pure and Applied Physics, IUPAP, Dr Yves Petroff, has been appointed by the IUPAP Council to be the IUPAP representative in the ICO Bureau, which is essentially a position of an ICO Vice-President. The ICO Bureau for the term 1999-2002 is therefore now complete : it is listed at the top of this Newsletter.

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