

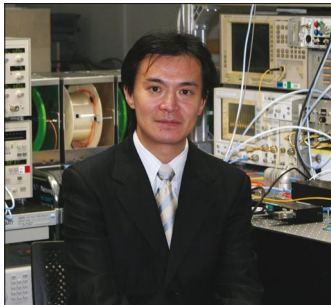


NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE • INTERNATIONAL COMMISSION FOR OPTICS

Hideyuki Sotobayashi wins the ICO Prize

The ICO Prize for 2006 is won by Dr Hideyuki Sotobayashi of Japan.



Dr Hideyuki Sotobayashi, a senior scientist at the National Institute of Information and Communications Technology, Japan.

Dr Hideyuki Sotobayashi, a senior researcher at the Advanced Communications Technology Group, National Institute of Information and Communications Technology (NICT) in Japan, has been awarded the ICO Prize for 2006. A talented researcher, Dr Sotobayashi was chosen for “his outstanding contributions in the areas of optics communications, optical fibre technologies and new photonic devices. These achievements were done as a researcher younger than 40 years old (as per 31 December 2006)”.

Dr Sotobayashi received his PhD in electrical engineering in 1997 from the University of Tokyo. He then served as an attached researcher at the NICT and is currently a senior scientist at the same institution in the Advanced Communications Technology Group. He is an affiliated researcher at the Research Laboratory of Electronics at the Massachusetts Institute of Technology (US).

His research interests include fibre lasers, highly nonlinear optical fibres for supercontinuum generation, nanoscale photonic-crystal microcavities, broadband optical amplifiers based on optical fibres, optical code division multiplexing (OCDM), transmission systems and ultrafast hierarchical hybrid OCDM/wavelength demultiplexing (WDM) photonic devices.

Among his many achievements in research, in 2002 Dr Sotobayashi and two collaborators proposed a photonic gateway performing the bilateral conversion and reconversion of multiplexing format and operating at 40Gbit/s (4×10 Gbit/s). The optical OCDM-to-WDM conversion and WDMO-to-CDM reconversion was demonstrated in an experiment for the first time. The experiment was based on ultrafast photonic processing in both the time and frequency domains, namely optical encoding/decoding along with optical time-gating in the time domain, and supercontinuum generation followed by spectrum slicing in the frequency domain. Thus they proved the feasibility of ultra-high-speed operation in photonic networks.

Moreover, Dr Sotobayashi has reviewed the latest photonics devices with the intention of redesigning them in order to simplify their configurations.

Through these accomplishments and others, Dr Sotobayashi has significantly contributed to

improving the performance of key technologies for hierarchical optical time domain (OTDM)/WDM multiplexing format conversions, and OTDM wavelength-band conversion networks.

Dr Sotobayashi has authored or co-authored more than 60 peer-reviewed articles in international journals and has been invited to various international conferences. He has received many distinctions and awards including the 1999 Young Engineer Award from the Institute of Electronic and Communication Engineers of Japan and the 2005 Young Scientist Award from the Ministry of Education, Culture, Sports, Science and Technology of Japan. In addition, he holds one awarded patent.

Dr Sotobayashi is very active in a number of professional societies in optics, photonics and electrical engineering. In recent years he has participated in many scientific committees and tutorials in photonics and optical communications technologies.

Optical transmission technologies are dramatically progressing in part because of Dr Sotobayashi's numerous contributions to optical technology and devices. The future of photonic networks is very promising and will enable routing and switching in the optical layer by use of ultrafast photonic processing.

Dr Sotobayashi is expected to deliver a plenary lecture at one of the forthcoming major ICO topical meetings, where the award ceremony for the ICO Prize 2006 will take place. This event will be announced in due course.

The ICO Prize committee is chaired by Dr B Y Kim and its members are Prof. S Bagayev (Russia), A Friesem (Israel), G Jin (People's Republic of China), J Love (Australia) and A M Weiner (US).

The committee is now seeking nominations for the ICO Prize 2007. Nominators are asked to visit the ICO website and follow the instructions given on the awards page (www.ico-optics.org/awards.html).

Nominations should be submitted no later than 15 April 2007. They can be sent by post to Dr B Y Kim, chair of the prize committee, at Novera Optics, KT Second Research Centre, 463-1 Jeonmin-dong, Yuseong-gu, Daejeon 305-811 Korea; sent by fax: +82 42 602 3799; or sent by e-mail: yoon.kim@noveraoptics.co.kr.

Palestinian wins Galileo Galilei Award

Prof. Mohammed M Shabat wins the ICO Galileo Galilei Award 2006 for his many contributions to optics and photonics.



Prof. Mohammed M Shabat, a professor of physics at the Islamic University of Gaza, Palestine.



Prof. Shabat presenting at the 9th International Symposium on Microwave and Optical Technology.



Undergraduate students at work in the IUG laboratory for electronics.

ICO established the Galileo Galilei Award in 1993 to recognize outstanding contributions in the field of optics that are achieved under unfavourable circumstances. According to the rules of the award, outstanding contributions include advances in fundamental scientific questions or problems; research or development of optical methods or devices; or scientific or technical leadership in the establishment of regional optical centres. Winners will have experienced difficult economic or social conditions, or a lack of access to scientific or technical facilities or sources of information.

For the year 2006 the recipient of the award is Prof. Mohammed M Shabat at the Islamic University of Gaza (IUG), Palestine. Prof. Shabat was selected “for his outstanding scientific contributions in the area of theoretical and electromagnetic optics, which were accomplished under comparative unfavourable circumstances as defined on the award call and for his relevant work for the organization of optics and photonics activities in Palestine”.

Prof. Shabat was born in Beit Hanoun, Gaza Strip, Palestine, in 1960. He received his BSc in physics from Al-Aazhar University, Egypt, in 1984 and his PhD from the University of Salford, UK, in 1990. He was a research fellow at the University of Manchester’s Institute of Science and Technology, UK, from 1989 to 1992. In 1992 he joined the IUG as an assistant professor of physics. The IUG is the first higher-education institution to be established in the Gaza Strip. The Faculty of Science at IUG is one of the pioneering faculties in Palestine. It was established to meet the needs of specialists and scientific researchers and to educate students in the latest developments in science and technology.

Prof. Shabat served as dean of the Faculty of Science from 1993 to 1997, and served as vice-president of administrative affairs at IUG from 2001 to 2005. In 1996 he became associate professor of physics and was made professor of physics in 2000. He was awarded the Shoman Prize for a Young Arab Scientist (Jordan) in 1995, and received the Humboldt Research Fellowship from 1998 to 1999 at the Centre for Semiconductor Technology and Optoelectronics, Duisburg-Essen University, Germany.

Since 1994 Prof. Shabat has been a visiting scientist in various institutes, universities and research laboratories: Bochum University, Germany; the Institut National Polytechnique de Grenoble (INPG), France; Salford University, UK; the International Centre for Theoretical Physics (ICTP), Italy; and Duisburg-Essen University, Germany. He is currently visiting scientist at the Max Planck Institute for the

Physics of Complex Systems, Germany. In addition to his strong research background Prof. Shabat has published more than 140 papers in international journals and has contributed to many local and international conferences. His research interests include non-linear optical sensors, optoelectronics, magneto-static surface waves, numerical techniques, mesoscopic systems, energy physics, applied mathematics, nanotechnology and physics education.

Prof. Shabat is very devoted to his students. He has supervised more than 20 postgraduate students in physics and mathematics. Recently he established a Palestinian Optical Society. At IUG he has been an active member of scientific committees for establishing new postgraduate programmes in mathematics, physics and electrical engineering, as well as undergraduate programmes in computer science, environmental sciences and optometry. He was a member of the editorial board for the journal *Transactions on Magnetics* from the Institute of Electrical and Electronics Engineers (IEEE) from 1996 to 1997.

Prof. Shabat has been active in raising the international profile of Palestinian science. He has served as associate member of the ICTP (1997); a member of the Palestinian delegation to the 44th meeting of the International Atomic Energy Agency in Austria (2000); a senior member of IEEE (2003); a member of the steering committee of the World Renewable Energy Congress/Network, UK (2003); a fellow of the Academy of Sciences for the Developing World (2004); and a member of the committee for the Shoman Prize for Young Arab Researchers (2006). Prof. Shabat is also a member of the Palestinian Physical Society; the Palestinian Society for Mathematics and Computer Sciences; the Palestinian national committee of the Ministry for Higher Education in Science, Technology and Research; and a fellow of the Palestinian Academy of Sciences. Prof. Shabat is the first Arabian scientist to win the Galileo Galilei Award.

The ceremony for the 2006 Galileo Galilei Award will be held sometime in 2007 or 2008 and it will be followed by the plenary lecture delivered by Prof. Shabat at one of the major ICO conferences during that period. Details will be published in a future issue of the *ICO Newsletter* and on the ICO website.

The ICO Galileo Galilei Award committee consists of: Ichirou Yamaguchi (Japan), chair, and members S Bagayev (Russia), Z Ben Lakhdar (Tunisia), A Consortini (Italy), N Gaggioli (Argentina) and V Vlad (Romania).

The 2007 award is now open for nominations. Nominators are asked to view www.ico-optics.org/Awards for more information.

ICO Bureau decides development strategy

The Bureau approves actions to develop ICO at a two-day meeting in St Petersburg.

The ICO Bureau meets once every year to discuss updates and developments for the current ICO programmes and to determine whether new activities should be considered. In the years when the General Conference and General Assembly take place, the Bureau meets where those events are held. In addition to those special dates, the Bureau usually meets during major ICO meetings. This year the ICO Bureau held its annual meeting in Saint Petersburg, colocated with the ICO Topical Meeting on Optoinformatics/Information Photonics 2006.

The two-day meeting was held at the Research Institute of Optoinformatics at Saint Petersburg State University of Information Technologies, Mechanics and Optics (ITMO). The hospitality and technical support provided by ITMO's academic authorities helped to make the meeting a success.

Prof. Nikolay Nikonorov, director of the Research Institute of Optoinformatics, presented a summary of activities and research areas developed at the institute with details of research on optical materials, GRIN media and 3D holography. In addition to other approved actions, ICO will try to increase its presence in ICSU activities, enhance the links with industry and coordinate activities in the areas of optics and photonics with international societies for education and training. ICO will also coordinate the internal organization and



The ICO Bureau. First row from left to right: M L Calvo, A T Friberg, G von Bally, R Dándliker and A Sawchuk. Second row (from left to right): P Stahl, G Sincerbox, I Yamaguchi, A Consortini, H Lefèvre, B Y Kim, G Jin, A Guzmán, A Wagué, M Kujawinska, Y Pettrof and M Gu.

territorial committees. Detailed information will be offered in the corresponding Green Book edited by the ICO Secretariat at the end of term 2005–2008.

The next ICO Bureau meeting will be held in Cape Coast, Ghana, during the ICO Topical Meeting 2007 on Optics and Laser Applications in Medicine and Environmental Monitoring for Sustainable Development in November 2007.

A detailed report on the ICO Topical meeting on Optoinformatics/Information Photonics 2006 will appear in the April 2007 issue of the *ICO Newsletter*.

Visit to Mexican institutions bears fruit

A Cuban researcher visits Mexico under ICO's Travelling Lecturer Programme.



Dr Fájér delivering a lecture at CINVESTAV, the National Polytechnic Institute, in Mérida in Mexico.

From 19 August to 9 September 2006 Dr Víctor Fájér, a researcher at the Centre of Technological Applications and Nuclear Development (Cuba), visited different Mexican institutions under the ICO Travelling Lecturer Programme. These institutions have shown an interest in the development of laser systems constructed in Cuba as well as their use in analysis. The visit included the Federal District and the Sinaloa and Yucatán states.

Dr Fájér delivered talks on design aspects, promoting collaboration in the region, and the development of optical instruments and their applications. The first lecture, entitled "New developments in laser polarimeters and their applications", was given in the Centre of Applied Sciences and Technological Development (CCADET), where Dr Fájér received invaluable support from Dr Roberto Ortega.

CCADET, a centre at the National Autonomous Metropolitan University of Mexico (UNAM), develops methods and techniques for



Dr Víctor Fájér with researcher I Martínez-Rodríguez at the Laboratory of Chromatography, Mazatlán Research Station on Aquaculture and Environmental Management.

employing optics, electronics and mechanics. It has an infrastructure of optical laboratories that enables researchers to perform experimental studies of nonlinear optics, optical fibres and other topics connected with lasers. During his visit to the centre Dr Fájér held discussions with

Contacts

International Commission for Optics (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 Optica,
Universidad Complutense,
28040 Madrid, Spain.

E-mail: 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

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J Braat, M Gu, I C Khoo,

G Sincerbox, P Stahl, A

Wagué

Senior adviser (ad personam)

P Chavel

IUPAP Council representative

Y Petroff

researchers and visited the laboratories.

Dr Fájér next visited the Mazatlán Research Station on Aquaculture and Environmental Management (CIAD). This visit was facilitated by Dr María Cristina Chávez, director of the research station. At the research station Dr Fájér gave a seminar on “Polarimetric and chromatographic techniques employing lasers for vegetable extracts” mainly to promote different applications of the laser systems to potential users. Dr Fájér also visited the analytical laboratory, which has powerful chromatographic equipment.

As a result of his visit the Research Station on Aquaculture and Environmental Management decided to promote these techniques in similar units, such as the one in Culiacán which analyzes agricultural products.

The third exchange, organized by Dr Rodrigo Patiño, took place at the Research Centre for Investigation and Advanced Studies (CINVESTAV) at the National Polytechnic Institute. Dr Fájér visited various laboratories, including those belonging to the Department of Applied Physics. The applied-physics depart-

ment was opened in 1987 and at present has 28 lecturers, all of whom belong to the National Research System. The research interests of the members of the department include corrosion, electrochemistry, physics and chemistry of materials, condensed matter, complex systems, statistics, nonlinear physics, elementary particle physics and life matter.

Dr Fájér delivered a seminar entitled “Design criteria of automatic polarimeters: influence of the spectral bandwidth on polarimetric measurements”. Researchers, technicians and students from CINVESTAV actively participated in the seminar.

During his visit to CINVESTAV, Dr Fájér and others identified a mutual interest in collaborating on the application of laser systems. This tentative interest could be met with a collaboration agreement between CINVESTAV and the Centre of Technological Applications and Nuclear Development of Cuba.

All the institutions mentioned above showed strong interest in promoting the applications and development of laser systems in the Latin-American region.

Forthcoming events with ICO participation

Below is a list of events with ICO participation that are coming up in 2007–2008. For further information, see www.ico-optics.org/events.html.

17–19 April 2007

International Workshop Technolaser 2007

Havana, Cuba.

Contact: Dr J R Triana, tecnolaser@ceaden.edu.cu,
www.ceaden.cu/tecnolaser/index.asp

3–5 June 2007

Education and Training in Optics and Photonics (ETOP) 2007

Ottawa, Canada.

Contact: Dr Marc Nantel, marc.nantel@oce-ontario.org

9–11 July 2007

3rd Asian and Pacific Rim Symposium on Biophotonics (APBP 2007)

Cairns, Australia.

Contact: Prof. Min Gu, mgu@swin.edu.au,
www.apbp2007.com

5–7 September 2007

International Conference on Optics and Laser Applications – ICOLA 2007

Yogyakarta, Indonesia.

Contact: Dr Sar Sardy, sardy@eng.ui.ac.id

11–14 September 2007

8th International Conference on Correlation Optics

Chernivtsi, Ukraine.

Contact: Prof. Oleg V Angelsky, oleg@optical.chernovtsy.ua

8–12 October 2007

Advanced Infrared Technology and Applications International Workshop 2007 (AITA 9)

León, Guanajuato, Mexico.

Contact: Prof. Marija Strojnik, mstrojnik@aol.com,
<http://ronchi.isti.cnr.it/AITA2007>

19–22 November 2007

ICO Topical Meeting 2007 on Optics and Laser Applications in Medicine and Environmental Monitoring for Sustainable Development

Cape Coast, Ghana.

Contact: Prof. Paul Buah-Bassuah, buahbass@hotmail.com

7–11 July 2008

ICO-21, Triennial Congress of the International Commission for Optics

Darling Harbour, Sydney, Australia.

Contact: Prof. John Love, jdl124@rsphysse.anu.edu.au

Responsibility for the accuracy of this information rests with ICO. President: Ari T Friberg, Royal Institute of Technology, Optics, Electrum 229, SE-164 40 Kista, Sweden; e-mail: 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.



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