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In this April 2011 issue we again have contributions from members worldwide. Prof. Hercules Avramopoulos has prepared a nice summary of EURO-FOS, a network of excellence funded by the European Commission to create a pan-European laboratory for lightwave communications. We also have Chapter Highlights from Montreal, Canada, where a vibrant photonics community is very active. Also from Canada, we have a preview of the Information Photonics Conference to be held in Ottawa (my home town) in May. I hope you enjoy the issue, and look forward to meeting you at a conference in the future.

I write this column soon after the devastating earthquake that occurred in Japan and caused a tsunami that resulted in devastation there and damage in several countries. I extend my deepest sympathies to everyone affected by this tragedy. I am sure that the photonics community will do everything it can to assist in recovery efforts.

Krishnan Parameswaran
As you read this, it will be spring and, hopefully, the weather will have improved wherever you live. Summer is coming and life is good. It’s almost time for CLEO which is the first major business meeting of the year for our Society. There is still plenty for us to do before summer vacation so let me tell you a little about some of those people who will do much of the heavy lifting.

And plan for the future…

*My interest is in the future because I am going to spend the rest of my life there.*

— Charles F. Kettering

As the IEEE Photonics Society moves forward this year, new leadership will help to form the future of the Society. Hideo Kuwahara joins the executive leadership as president-elect, Tom Koch has accepted a position as vice-president for technical affairs, and four of our distinguished colleagues have been elected to the Board of Governors — Dalma Novak, John McInerney, Peter Andrekson, and Paul Juodawlkis. All are distinguished scientists and engineers in their own right but have also consistently given of their energy and abilities to promote our society. Please join me in welcoming them to their new positions within the Society. We are indeed in good hands for the future.

I was pleased to find this quote from an engineer – Charles Kettering founded Delco and was head of research for General Motors for 27 years – because I think we are trained to look farther into the future than many other professional disciplines. And it is that very thought that led to the revision of the position of vice-president for technical affairs (VP-TA). We feel that our Society was born to a marvelous vision for the future and, as this future develops, we must always keep an eye to what might be next. That will be the primary responsibility for the VP-TA. The important question for Tom and his successors is, simply put, what will be our newest fields of interest in the future and how can we best position ourselves to be the undisputed leaders in those fields. We have, and will use, a wide array of tools to accomplish this positioning including JSTQE and special issues of our other journals, special symposia in existing meetings, new topical meetings, etc.

This and that…

Last year, seventeen of our members were elevated to the rank of IEEE Fellow: We have had a look at some of the statistics which you may find interesting. The Photonics Society ranks 14th in membership of the 45 IEEE societies and councils but we were 4th in the total number of new Fellows in 2010. The percentage of our membership who are Fellows and the percentage of our Fellows who are women are both higher than the IEEE average. The median age for elevation to Fellow is 52. If you are a Fellow, please consider nominating some of your colleagues for that honor next year. If you are not yet a Senior Member and you qualify, please go to the IEEE web site and learn how to apply.

In an ever faster moving world, we cannot get by without our identity being channeled in fewer bytes. It seems nearly everything has its own TLA (Three Letter Acronym). We are the Society formerly known as LEOS which was unique for its four letters. Well, if we must have a TLA for the Society, we should choose it ourselves. So, until or unless someone can come up with something better, we are now the IEEE Photonics Society (IPS) and our fall conference is the IEEE Photonics Conference (IPC). I am looking forward to seeing many of you in Baltimore for CLEO in May.

With Warm Wishes,

Jim Coleman

University of Illinois
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Research Highlights

EURO-FOS: Towards a Pan-European Laboratory for Lightwave Communications

Christos Kouloumentas, Dimitrios Klonidis, Colja Schubert, Reza Nejabati, Jose Lazaro, Didier Erasme, Marco Forzati, Eduward Tangdiongga, Per Olof Hedekvist, Juerg Leuthold, Andrea Carena, Bob Manning, Claudio Porzi, Pere Perez Millan, Xing-Zhi Qiu, Antonio Teixeira, Jorge Seoane, and Hercules Avramopoulos

Introduction
EURO-FOS (www.euro-fos.eu) is a Network of Excellence funded by the European Commission under the Seventh Framework Programme (FP7) and coordinated by the Institute of Communications and Computer Systems of the National Technical University of Athens (ICCS/NTUA-Greece). The Networks of Excellence constitute a funding scheme that is exploited by the European Commission to strengthen scientific and technological excellence on a particular research topic through the durable integration of the capacities of European research organizations. Within this framework, EURO-FOS forms a powerful cluster of 17 European academic and research institutes from 12 European countries (see Fig. 1) with expertise in the design, development and testing of photonic components and subsystems that are applicable in high-capacity lightwave communications networks. The motivation for creating such a network came from the observation that the map of European research in photonics technology includes a large number of active but smaller in scale laboratories distributed all over Europe. EURO-FOS represents an ambitious initiative to integrate expertise, equipment and resources from the participating institutes towards the creation of a powerful Pan-European laboratory that scales more favorably than linearly the potential and the capabilities of the individual units.

EURO-FOS scientific activities relate to the design, development and testing of advanced subsystems through functional integration of photonic devices, aiming at bridging the gap between research on fundamental device-level physics and developments on the network level of optical communications. Collaboration between the consortium members is conducted through joint experimental activities in four discrete areas of focus: 1) digital optical transmission systems, 2) optical sources and amplification, 3) high-speed optical network subsystems, and 4) next-generation optical access subsystems.

The Pan-European Laboratory (Eurofoslab)
Eurofoslab (www.eurofoslab.eu) is a laboratory equipped with state-of-the-art components, devices, subsystems, testbeds and access to deployed optical fiber links. Its resources are physically located at the 17 laboratories of the network, but are centrally administrated by means of web-tools that have been developed by the University of Essex (UEssex-UK) and allow for the reservation of the resources and scheduling of joint experiments using the reserved equipment. After the first two years of the network, the inventory of eurofoslab contains more than 700 items. These include 48 complete systems and testbeds, such as Terabit/s OTDM and OFDM testbeds, coherent WDM testbeds, WDM transmission systems at 1550 nm (C- and L-band) and 1310 nm, Radio over Fiber (RoF) systems based on single-mode and multimode fibers, and other. They also include more than 50 self-standing subsystems like complete optical line terminals (OLT), optical network units (ONU), transmitters, receivers and regeneration units. Finally, the eurofoslab inventory contains a large number of photonic and optoelectronic devices, 14 simulation platforms and access to 4 installed fiber links in Europe.

Through eurofoslab, EURO-FOS facilitates shared access to expensive laboratory infrastructures, creating economies of scale in the development, testing and validation of photonic...
subsystems and systems. More significantly, the synergy through eurofoslab allow for new perspectives and a higher potential for the network participants in designing and participating in ambitious, large-scale experimental endeavors, otherwise not feasible due to the lack of equipment in the individual laboratories.

**Research Directions and Innovation**

Research within EUFRO is organized in a number of research topics (RTs) that fall within four discrete disciplines or as they are named within EUFRO Centers of Excellence (CEs). The research is implemented by joint experimental activities that usually span across multiple RTs and areas, as they represent complex experimental endeavors, enabled by the diverse expertise of the network participants and the availability of a large variety of advanced equipment. Within the first two years of network operation, the number of scientific publications achieved is over 200 and the patents that have been filed are 7. The four CEs of EUFRO are described below.

1) **Digital Optical Transmission Systems (CE1)**

The relevant activities are led by Heinrich-Hertz Institut (HHI-Germany) and are dedicated to the investigation, design and experimental evaluation of new photonic sub-systems that enable higher capacities, longer reach, better transmission performance and higher bandwidth efficiency for multi-Terabit capacity transmission systems. Topics of interest include multi-carrier transmission systems for core and metro networks with particular emphasis on OFDM techniques, coherent transmission systems using spectrally efficient higher-order modulation formats, and combination of OTDM technology with multi-level modulation formats. Significant results within the first two years of network operation include the achievement of a record spectral efficiency of 8 bits/s/Hz in an OFDM system with 64-QAM modulation format [1], the demonstration of Nyquist WDM-enabled Terabit/s long-haul transmission over installed fiber [2] and a record transmission over 110 km of an 0.87 Terabit/s OTDM signal with D8PSK modulation format and polarization diversity [3].

2) **Optical Sources and Amplification Systems (CE2)**

This subset of activities is coordinated by Scuola Superiore Sant’Anna (SSSUP-Italy) and relates to the investigation of novel amplification systems for access and burst-traffic networks, techniques and applications of parametric amplification and development of novel schemes for tunable laser sources. Main results include novel combinations of Raman amplification and use of EDFA for C+L band amplification in extended reach PON topologies and the development of a

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**Figure 2.** Setup of a transmission loop experiment over installed fiber supporting transmission of $16 \times 100 \text{ Gb/s}$ channels with polarization-multiplexed QPSK format. From reference (2).
testbed for high-resolution, 3-dimensional (wavelength/time/power) measurements during the transients of tunable laser sources [4].

3) High-Speed Optical Network Subsystems (CE3)
EURO-FOS activities within this area are coordinated by Technical University of Denmark (DTU Fotonik-Denmark) and are devoted to the investigation of the role of all-optical techniques for developing next-generation routers and cross-connects in dynamic WDM network architectures. Efforts are focusing on the development of all-optical processing units for advanced modulation formats, investigation of a variety of all-optical switching technologies, development of novel clock-recovery and regeneration schemes, as well as the integration of sub-modules for the development of prototypes and the implementation of fundamental functionalities in optical routing systems. Significant outcome of these activities relates to the development of a self-coherent receiver for polarization multiplexed DQPSK signals [5], the demonstration of the first 650 Gb/s OTDM detector performing clock recovery, channel identification and demultiplexing [6], and the demonstration of a complex contention resolution scheme for nodes in optical packet switching (OPS) networks [7].

4) Next-Generation Optical Access Subsystems (CE4)
The last subset of research activities is led by Universitat Politècnica de Catalunya (UPC) and is devoted to the study of novel components and subsystems for next-generation passive optical networks (PONs), wired-wireless hybrid networks and high-capacity optical in-home networks. Research focuses on...
advanced radio-over-fiber (RoF) techniques for access and in-home networks, monitoring and mitigation of transmission impairments in extended reach PON architectures, novel designs of user terminals and OLT subsystems including burst-mode receivers, optical transmitters, optical signal generation devices, as well as remote node architectures and modules for metro-access convergence. Research highlights include in this case the demonstration of an optically-assisted downstream cancellation technique using a Fabry-Perot filter at the ONU [8], and the design and development of novel burst-mode receivers for use in PONs [9].

Towards a Coherent European Research Scene

The integration of expertise and laboratory infrastructures allows EURO-FOS for serving as the cohesive factor between complementary, smaller in scale European specific targeted research projects (STRePs). The pronounced objective of these projects is usually the development of innovative photonic components and modules that advance the state-of-the-art in terms of integration density and functionality. Nevertheless, the system-level research within the framework of these projects is usually limited and does not allow for the full investigation of these modules in diverse applications. EURO-FOS is aiming at filling this gap by providing access for the consortium members to these modules and incorporating them in broader scope, system-level, experimental studies. Only within the second year of network operation, EURO-FOS established collaboration on the above described basis with 12 European projects, contributing in this way to demonstration of new concepts and ideas.

Collaboration with Industry

A strategic objective of EURO-FOS network is the correlation of activities with the view of European industry in the field of photonic communications and the creation of a framework for substantial synergy. The interaction is aiming at developing common consensus on critical issues and possible solutions concerning next-generation photonic subsystems, and is materialized through continuous feedback from the 29 industrial affiliates of the program on the research directions within EURO-FOS. From a more practical point of view, the industrial affiliates are actively collaborating with the network participants on joint experimental activities that concern research efforts of common interest, having resulted within the first two years of the network in 40 joint publications. A last but most significant type of synergy relates to the creation of a non-profit Pan-European legal entity out of the EURO-FOS consortium and the envisaged exploitation of eurofoslab infrastructures for the provision of services to the European industry in order to substantially support their relevant R&D activities. Strategic allies in all these efforts are the members of the EURO-FOS industrial advisory board (IAB), representing 6 companies that are active in the European market of optical communications: ADVA Optical Networking, Alcatel Lucent Germany, Nokia Siemens Networks, Finisar, Tellabs and VPI Systems.

Sharing the Vision with the Scientific Community and the General public

Besides the technical activities, EURO-FOS is attempting to serve as a point of reference for the scientific community sharing views and visions on the evolution of photonic communications, the integration of educational activities in Europe and the promotion to the general public of the role that photonic technology can play in modern societies. To this end, EURO-FOS has organized so far five international workshops on ultra-high capacity optical transmission systems, optical switching technologies and optical access networks. It has also edited the “European Higher-Education Handbook” listing European postgraduate programs

Figure 5. Left: Picture from the 2nd EURO-FOS Summer School organized at DTU-Denmark in August 2010. Right: The “European Higher-Education Handbook” prepared by EURO-FOS and being available by the network website (www.euro-fos.eu).
in photonic communications, and has organized two summer schools and a large number of local events in the twelve countries of the participating institutes, which were open to high-school students and the general public.

Summary
EURO-FOS is a network of excellence funded by the European Commission under the Seventh Framework Programme. The network consists of 17 academic partners and has the primary target to reinforce research in academic groups through integration of researchers, laboratories, testbeds and photonic devices with the additional aim to assist major European companies and small-medium enterprises (SMEs) to maintain technical excellence and innovation in the photonic industry.

Biographies
Christos Kouloumentas received his PhD from the NTUA, and he is now a member of the EURO-FOS coordinating team at the same organization.

Dimitrios Klonidis is senior research fellow at the Networks and Optical Communications group of AIT and co-leader of the EURO-FOS WP2 dissemination activities.

Colja Schubert is head of the Submarine and Core Systems group at the Fraunhofer HHI in Berlin and leads the EURO-FOS CE1 on digital optical transmission systems.

Reza Nejabati is an RCUK Academic Fellow in University of Essex. His research area of focus is the application of ultra high-speed network technologies for future Internet.

Jose A. Lazaro is Associate Professor at the Telecommunications Engineering School at UPC (ETSETB) and coordinator of the activities of the CE4 of EURO-FOS.

Didier Erasme is Professor in TELECOM ParisTech/Institut TELECOM. In EURO-FOS, he is leading the workpackage dealing with the Joint experimental activities.

Marco Forzati is Senior Scientist at the Swedish research institute Acreo, working on high-capacity optical transmission and optical access networks.

Eduward Tangdiongga is Assistant Professor on short-haul optical networks of Eindhoven University of Technology, The Netherlands.

Per Olof Hedekvist is Associate Professor at Chalmers and Researcher at SP Technical Research Institute of Sweden, coordinating the EURO-FOS activities at Chalmers.

Juerg Leuthold is Professor and head of the Helmholtz Research Institute of Microstructure Technology as well as the head of the Institute of Photonics and Quantum Electronics of the Karlsruhe Institute of Technology (KIT). He is coordinating the participation of KIT in EURO-FOS.

Andrea Carena is Assistant Professor at Politecnico di Torino. His current interests are in the field of coherent optical systems for high capacity transport networks.

Bob Manning is a Principal Investigator in the Photonic Systems Group at the Tyndall National Institute (TNI) and coordinates the TNI activities within EURO-FOS.

Claudio Porzi received his PhD from SSSUP, where he is currently employed as Assistant Professor working on all-optical signal processing and optical packet switching.

Pere Pérez-Millán is Research Fellow of the Nanophotonics Technology Center of UPV/LC, where he leads the lasers and fiber-based devices group.

Xing-Zhi Qiu is a project manager of IMEC at INTEC department of Ghent University and responsible for IMEC commitments and tasks within EURO-FOS project.

Antonio Teixeira is Associate Professor at the Electronics and Informatics Department of the Universidade de Aveiro, researcher at the Instituto de Telecomunicações (IT) and is coordinating the participation of IT in EURO-FOS.

Jorge Seoane is Assistant Professor at DTU Fotonik, Technical University of Denmark, and coordinator of EURO-FOS CE3 (High-speed optical network subsystems).

Hercules Avramopoulos is Professor at the School of Electrical and Computer Engineering of NTUA and coordinator of the EURO-FOS network.

References
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IEEE Photonics Society 2010 Best Student Paper Award Recipients

The IEEE Photonics Society Best Student Paper Awards are open to students from universities whose papers have been accepted for presentation at the Photonics Society Annual Meeting. The top five finalists receive certificates of recognition and monetary awards ranging up to $1000.

The results for the 2010 IEEE Photonics Society Best Student Paper Award are as follows:

1st Place – Roger Chen
2nd Place – Shamsul Arafin
3rd Place – Alden Curtis
3rd Place – Carolina P. Lai
3rd Place – Slaven Moro

Roger Chen is pursuing a Ph.D. as a member of Professor Connie Chang-Hasnain’s optoelectronics research group in the Electrical Engineering and Computer Sciences Department at the University of California, Berkeley. He received a B.S. in Electrical Engineering from Boston University in 2007. His research includes characterization of novel nanophotonic phenomena and material properties of semiconductor nanostructures. He also works on silicon-based nano-optoelectronic devices such as nanolasers for silicon photonics integration. His additional interests are in synthesis of nanomaterials, biophotonics, and cavity quantum electrodynamics. Roger Chen has co-authored 16 research papers in peer-reviewed journals and conferences. He is a student member of OSA and SPIE and a recipient of a National Defense Science and Engineering Graduate Fellowship.

Shamsul Arafin received the B.Sc. degree in Electrical and Electronics Engineering from Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, in 2005, and the M.Sc. degree in Communication Technology from Universität Ulm, Ulm, Germany, in 2008. He is currently working toward the Ph.D. degree at Walter Schottky Institut, Technische Universität München, Garching, Germany, under the supervision of Prof. M.-C. Amann. His current research interests include GaSb-based vertical-cavity surface-emitting lasers (VCSELs) for wavelengths above 2 µm. During his PhD study, till now he has authored and coauthored more than 25 papers in leading technical journals and international conferences, including one invited paper presented at the ISLC 2010, Kyoto, Japan. He is a member of the IEEE, IEEE Photonics Society, IEEE Electron Devices Society, Optical Society of America (OSA) and International Society for Optical Engineering (SPIE), Electrochemical Society (ECS) and AVS: Science and Technology.

Alden Curtis received his B.S. in physics from Oglethorpe University in Atlanta, GA, United States, in 2005. He is currently working on his Masters degree in Electrical Engineering at Colorado State University, USA. His research interests are high average power, chirped laser pulse amplification systems, with the application of creating high average power, compact x-ray lasers. For his Masters he is specifically dealing with the preamplification stages of the system, before the main power amplifier.

Caroline P. Lai received the B.A.Sc. degree (with honors) in electrical engineering from the University of Toronto, Canada, in 2006 and the M.S. degree in electrical engineering from Columbia University, New York, NY, in 2008. Currently, she is pursuing the Ph.D. degree in electrical engineering at Columbia University under the supervision of Professor Keren Bergman. From May 2010 to August 2010, she was a research intern in the Optical Link and Systems Design group at IBM T. J. Watson Research Center, Yorktown Heights, NY, working under Dr. Jeffrey A. Kash. Her research interests lie in cross-layer communications, impairment and energy aware architectures, real-time performance monitoring, and optical packet switching for future energy-efficient optical networks, as well as optical interconnects, optically-connected memory systems, and photonic network interfaces for high-performance computing systems. She is a student member of the IEEE Photonics Society and the Optical Society of America. She has authored or co-authored numerous papers in peer-reviewed journals and international conferences, and regularly serves as a reviewer for several journals. She was awarded the IEEE Photonics Society 2010 Graduate Student Fellowship.
IEEE Photonics Society 2011 Young Investigator Award Recipient: Hatice Altug

The IEEE Photonics Society Young Investigator Award was established to honor an individual who has made outstanding technical contributions to photonics (broadly defined) prior to his or her 35th birthday. Nominees must be under 35 years of age on 30 September of the year in which the nomination is made. Candidates need not be members of the IEEE or the Photonics Society.

The 2011 Young Investigator Award will be presented to Hatice Altug, “for contributions on nanoplasmonics and integrated nanofluidics for biological sensing and spectroscopy.” The presentation will take place during the Plenary Session held on 3 June at CLEO/IQEC – Conference on Laser and Electro-Optics and the International Quantum Electronics Conference, May 1–6, 2011, Baltimore Convention Center, Baltimore, Maryland, USA.

Hatice Altug is an Assistant Professor in Electrical and Computer Engineering Department at Boston University. She received her Ph.D. degree in Applied Physics from Stanford University in 2007, and her B.S. degree in Physics from Bilkent University (Turkey) in 2000. Her research focuses on integrated nanophotonics, nanoplasmonics and nanofluidic systems and their application in biosensing, vibrational nanospectroscopy and optical communication. Her research has been featured as cover article of Nature Physics and Applied Physics Letters and also highlighted by National Science Foundation and many scientific magazines. Dr. Altug is the recipient of Office of Naval Research Young Investigator Award, National Science Foundation CAREER Award, Massachusetts Life Science Center New Investigator Award and IEEE Photonics Society Young Investigator Award. She received Peter Paul Career Professorship, Intel Graduate Student Fellowship, and IEEE Photonics Society Graduate Student Fellowship. She is the winner of 2004 Inventors’ Challenge competition of Silicon Valley and 2005 IEEE Photonics Society Best Paper and Research Excellence award.

IEEE 2011 Photonics Award Recipient: Amnon Yariv

The IEEE Photonics Award was established in 2002 by the IEEE Board of Directors. The award is presented for outstanding achievements in photonics. Photonics is defined as the science and technology of generating and harnessing light and other forms of radiant energy whose quantum unit is the photon.

Sponsored by the IEEE Photonics Society, the award consists of a bronze medal, certificate and honorarium.

For additional information on IEEE Technical Field Awards and Medals, to view complete lists of past recipients or to nominate a colleague or associate for IEEE Technical Field Awards and Medals, please visit http://www.ieee.org/awards.

The IEEE Photonics Award will be presented to Amnon Yariv, “for fundamental contributions to photonics science, engineering and education that have broadly impacted quantum electronics and lightwave communications.” The presentation will be made during the Plenary Session at CLEO/QELS Conference which is taking place May 1–6, 2011, at the Baltimore Convention Center, Baltimore, MD, USA.

With contributions spanning over 50 years and still continuing, Amnon Yariv’s work is at the heart of today’s high-speed optical communications systems. With his research group he proposed and developed in the 70’s the distributed feedback semiconductor laser, which is the main light source for fiber communication. He proposed and, with his group, demonstrated the optoelectronic integrated circuit. With colleagues he played a seminal role in introducing the field of Phase Conjugate Optics including the formulation of the quantum theory for non linear optics. At the California Institute of Technology, Pasadena, Dr. Yariv started one of the early university and research and teaching programs in quantum electronics and developed the textbooks that helped establish it as an academic discipline. He founded Oriel Corporation, which pioneered high-speed lasers for the cable television systems. An IEEE Life Fellow. Dr. Yariv is the Martin and Eileen Summerfield Professor of Applied Physics and a Professor of Electrical Engineering at the California Institute of Technology, Pasadena, CA.
### News

#### Royal Award—Giok-Dhan Khoe

The Dutch Queen awarded Professor Giok-Djan Khoe the title of Officer in the Order of Oranje-Nassau. Djan, a former President of the IEEE Photonics Society, is recognized for his contributions to Photonic Research in Eindhoven. Under his leadership, the research at the COBRA Institute reached world class level. He is also recognized for his achievements in launching successful collaborations among European Photonic groups. The medal was presented on behalf of the Queen by the Mayor of Eindhoven on February 3, on the occasion of his farewell symposium at the Technical University.

#### Call for Nominations IEEE Photonics Society 2011 Graduate Student Fellowship Program

The IEEE PHOTONICS SOCIETY established the Graduate Student Fellowship Program to provide Graduate Fellowships to outstanding Photonics Society student members pursuing graduate education within the Photonics Society field of interest (photronics, electro-optics, lasers, optics, or closely related fields). Up to ten Fellowships of $1,000 each will be awarded, based on the student membership in each of the main geographical regions:

**Americas Europe/Mid-East/ Africa Asia/Pacific**

**Prize:** Up to ten Fellowships of $1,000 each will be awarded this year. A complimentary conference registration will be available to each Fellowship recipient to attend the Photonics Society Annual Meeting for the award presentation.

**Eligibility:** Fellowship applicants must be an IEEE Photonics Society student member pursuing a graduate education within the Photonics Society field of interest. Students should normally be in their penultimate year of study at the time of application and be planning to submit their thesis on a timescale of 6 to 18 months after the application is submitted (i.e. those applying in May 2011 would normally expect to defend their thesis during 2012).

**Schedule:** In a given year, application packages will be due at the Photonics Society Executive Office, 445 Hoes Lane, Piscataway, NJ 08854 by 30 May and the ten Fellowship recipients will be notified by 30 July of the same year.

The Fellowships will be presented at the Photonics Society Annual Meeting.

**Fellowship Application Package Requirements:**
- Cover letter to include name, address, email, IEEE member number, expected date of submission of the thesis, and a listing of any activities related to Photonics Society, along with the names and contact information of two references.
- A one-page CV, including all degrees received and dates.
- One copy of educational transcripts.
- A 300-word statement of purpose describing the student’s research project and interests. The statement is to include the background to the project, what the student has achieved so far and how the research will be continued and developed by the student over the rest of the project.
- A list of the student’s publications with the most significant paper indicated and a 100-word description of the significance of the paper.
- Two reference letters from individuals familiar with the student’s research and educational credentials.

Guidelines have been established for the 2011 application process. Please check the Photonics Society web for more details (www.PhotonicsSociety.org). Submission information is now available.

For more information contact: PhotonicsAwards@ieee.org
Membership Section

Photonics Society Montréal Chapter

The second-largest city in Canada, Montréal is located 200 km (125 miles) east of Ottawa (Canada’s capital) and 60 kilometers north (38 miles) from the US border to New York State. More than 120 cultural communities are represented in French-speaking Montréal with 70% of its residents born outside the city. The IEEE Photonics Society has more than 150 active members within the Montréal Chapter, seven of which are Fellows, eight are Life members, and more than twenty are Senior members. The Photonics Society activities in Montréal are supported by five universities (McGill University, Concordia University, École Polytechnique de Montréal, École de Technologie Supérieure de l’Université du Québec (ÉTS), Institute National de la Recherche Scientifique) and community colleges (GEP André-Laurendeau) as well as several companies related to photonics (MBP Communications, ITF Labs, Reflex Photonics, Genia Photonics, O/E Land, and many others).

In the past, Montréal has been hosting the 19th Annual Meeting of the Photonics Society (2006) and the 22nd Optical Data Storage Topical Meeting (2006). In July, the city is hosting the 2011 Photonics Society Summer Topical focused on “Future Photonic Technologies and Emerging Applications.”

Awarded as the Most Improved Chapter in 2001 as well as receiving the award of Society Senior Member Initiative for three consecutive years (2006–2008) for the greatest number of senior member grade advancements, the Montréal Chapter has gained momentum in the past years with its young and dynamic research environment. At least four students received the IEEE Graduate Student Fellowship Award in the last 10 years: Alireza Hassani (2008 École Polytechnique, now Postdoctoral Fellow at INRS), Yannick Lizé (2007, École Polytechnique, now with AMCC), Dominik Pudo (2006, McGill University, now with RDDC Valcartier), and Michael Venditti (2002, McGill University, now with PMC Sierra).

The Chapter organizes seminars by local and international speakers for its members and different workshops for its student members. A series of presentations across affiliated universities and photonics related industry will promote Research & Development activities and infrastructure usage within the Montréal area. Tutorials featuring applications in biophotonics, sensing, integration and data communications will be organized. Outreach activities with other disciplines related to Physics, Material Engineering, and Biology will be promoted through multidisciplinary talks. Starting in 2011, the Montréal Chapter is creating a Student Travel award for its student members to attend the 24th Annual Meeting of the IEEE Photonics Society in Virginia (9–13 October). The call for submission will be announced in May 2011.

Chapter Chair
Odile Liboiron-Ladouceur (M’95) received the B. Eng. degree in electrical engineering from McGill University, Montréal, QC, Canada, in 1999 and the M.S. and Ph.D. degrees in electrical engineering from Columbia University, New York, in 2004 and 2007, respectively. Her doctoral research work focused on the physical layer of optical interconnection networks for high performance computing. From 1999 to 2000, she worked for Teradyne in Boston as an applications engineer in the mass storage business unit. She joined Texas Instruments in 2000 spending two years working in the fiber optic business unit based in Dallas as a design/test engineer. In 2006, she spent four months as an intern at the IBM T.J. Watson Research Center in Yorktown Heights, NY working on optical chip-to-chip interconnection as part of the DARPA-funded Terabus program. In 2007, Dr. Liboiron-Ladouceur received a postdoctoral fellowship from the Natural Sciences and Engineering Research Council of Canada. Since 2008, she is an assistant Professor in the department of electrical and computer engineering at McGill university. Her research interests include energy efficient photonic interconnects for high-performance computing systems. She is the author or co-author of over 45 papers in peer-reviewed journal and conference.

Benefits of IEEE Senior Membership

There are many benefits to becoming an IEEE Senior Member:
• The professional recognition of your peers for technical and professional excellence
• An attractive fine wood and bronze engraved Senior Member plaque to proudly display.
• Up to $25 gift certificate toward one new Society membership.
• A letter of commendation to your employer on the achievement of Senior member grade (upon the request of the newly elected Senior Member.)
Membership Section (cont’d)

• Announcement of elevation in Section/Society and/or local newsletters, newspapers and notices.
• Eligibility to hold executive IEEE volunteer positions.
• Can serve as Reference for Senior Member applicants.
• Invited to be on the panel to review Senior Member applications.

The requirements to qualify for Senior Member elevation are a candidate shall be an engineer, scientist, educator, technical executive or originator in IEEE-designated fields. The candidate shall have been in professional practice for at least ten years and shall have shown significant performance over a period of at least five of those years.

To apply, the Senior Member application form is available in 3 formats: Online, downloadable, and electronic version. For more information or to apply for Senior Membership, please see the IEEE Senior Member Program website: http://www.ieee.org/organizations/rab/md/smprogram.html

New Senior Members

The following individuals were elevated to Senior Membership Grade thru January:

Aaron J. Danner  Ivan B. Djordjevic  Michael J. Estes  Justin H. Hodiak  Michael Z. Komodromos
Junichiro Kono  Tetsuya Mizumoto  Kuniaki Motoshima  Tuan Anh Pham  Yunfeng Shen
Xiang Wan  Shinji Yamashita  Qiwen Zhan

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IEEE PHOTONICS SOCIETY NEWSLETTER 13
2011 Photonics Society Conference Calendar

CLEO  May 1 – 6, 2011
*The Conference on Lasers and Electro-Optics*
Baltimore Convention Center
Baltimore, Maryland
[www.cleoconference.org/](http://www.cleoconference.org/)

IEEE Sarnoff Symposium  May 2 - 4, 2011
*Sarnoff Symposium*
Nassau Inn
Princeton, New Jersey
[www.sarnoffsymposium.org](http://www.sarnoffsymposium.org)

HSD  May 8 – 11, 2011
*22nd Annual Workshop on Interconnections within High Speed Digital Systems*
Eldorado Hotel & Spa
Santa Fe, New Mexico
[wwwPhotonicsConferences.org/HSD2011](http://wwwPhotonicsConferences.org/HSD2011)

ICSOS  May 11 – 13, 2011
*IEEE International Conference on Space Optical Systems and Applications*
Le Merigot Marriott
Santa Monica, California

OFS21  May 15 – 19, 2011
*21st International Conference on Optical Fiber Sensors*
Fairmont Chateau Laurier Hotel
Ottawa, Canada

CTTE  May 16 – 18, 2011
10th Conference on Telecommunications Internet and Media Techno-Economics
Berlin, Germany
[www.ctte-conference.org](http://www.ctte-conference.org)

SOPO  May 16 – 18, 2011
*Symposium on Photonics and Optoelectronics*
Wuhan, China

IP  May 18 – 20, 2011
*2011 ICO International Conference on Information Photonics*
Ottawa Convention Center
Ottawa, Canada
Conference Section (cont’d)

CLEO EUROPE – EQEC May 22 – 26, 2011
The European Conference on Lasers and Electro Optics
XIIIth European Quantum Electronics Conference
ICM Center / New Munich Trade Fair Centre
Munich, Germany
www.cleoeurope.org/

CSW / IPRM May 22 – 26, 2011
Compound Semiconductor Week / 23rd International Conference on Indium Phosphide
and Related Materials
Maritim ProArte Hotel
Berlin, Germany
www.csw2011.org

OPEE May 27 – 29, 2011
2nd International Conference on Optics, Photonics and Energy Engineering
Jade Palace Hotel
Beijing, China
www.opee2011.net

NOMA June 5 – 11, 2011
10th Mediterranean Workshop and Topical Meeting
“Novel Optical Materials and Applications”
Grand Hotel San Michele
Cetraro, Italy
www.fis.unnical.it/NOMA

BioPhotonics June 8 – 10, 2011
International Workshop on BioPhotonics
Santa Elisabetta Congress Center, Parma University
Parma, Italy
http://biophotonics.tlc.unipr.it/

ICOME June 12 – 16, 2011
2011 International Conference on Micro/Nano Optical Engineering
Changchun Institute of Optics
Changchun, China
http://icome2011.csp.escience.cn

PVSC June 19 – 24, 2011
37th IEEE Photovoltaic Specialists Conference
Washington State Convention Center
Seattle, Washington
http://www.ieee-pvsc.org/PVSC37/

ISOM/ODS June 26 – 30, 2011
The Joint International Symposium on Optical Memory & Optical Data Storage Topical Meeting
Kauai Hawaii Resort and Beach Club
Lihue, Kauai Hawaii
www.photonicsconferences.org/ISOM-ODS2011/
OECC July 4 – 8, 2011
16th Opto-Electronics and Communications Conference
National Sun Yat-sen University
Kaohsiung, Taiwan
www.oecc2011.org

PS/COIN July 12 – 15, 2011
2011 International Conference on Photonics in Switching & the 10th Conference on Optical Internet
Osaka, Japan
http://wwwpn.comm.eng.osaka-u.ac.jp/pscoin2011/

SUM July 18 – 20, 2011
Photonics Society Summer Topicals
Hilton Montreal Bonaventure
Montreal Quebec, Canada
wwwPhotonicsConferences.org/SUM2011

PPIS July 23 – 24, 2011
2011 International Conference on Photonics, Power and Intelligent Systems
Beijing, China
http://iser-association.org/PPIS2011/

OMN August 8 – 11, 2011
2011 International Conference on Optical MEMS & NanoPhotonics
Sevgi Gonul Auditorium, Koc University
Istanbul, Turkey
www.omn2011.org

IQEC / CLEO Pacific Rim August 28 – September 1, 2011
2011 IQEC/CLEO Pacific Rim Conference
Sydney Convention and Exhibition Center
Sydney, Australia

NUSOD September 5 – 8, 2011
2011 International Conference on Numerical Simulation of Optoelectronic Devices
Angelicum, Pontifical University of Saint Thomas Aquinas
Rome, Italy
http://www.nusod.org/2011/

LFNM September 5 – 8, 2011
11th International Conference on Laser and Fiber-Optical Networks
V.N. Karazin Kharkov National University
Kharkov, Ukraine
http://lfnm.kture.kharkov.ua
Conference Section (cont’d)

GFP  September 14 – 16, 2011
8th International Conference on Group IV Photonics
The Royal Society
London, England
www.PhotonicsConferences.org/GFP2011

ECOC  September 18 – 22, 2011
2011 37th European Conference and Exhibition on Optical Communication
Palexpo
Geneva, Switzerland
www.ecoc2011.org

ICPNO  September 24 – 25, 2011
2011 International Conference on Photonics, Nanotechnology and Optoelectronics
Chongqing, China
www.iier-institute.org/icpno

AVFOP  October 4 – 6, 2011
Avionics, Fiber Optics and Photonics Conference
Holiday Inn on the Bay
San Diego, California
www.PhotonicsConferences.org/AVFOP2011

IPC  October 9 – 13, 2011
IEEE Photonics 2011
Marriott Crystal Gateway
Arlington, Virginia
www.PhotonicsConferences.org/ANNUAL2011

MWP /APMP  October 18 – 21, 2011
International Topical Meeting on Microwave Photonics
Asia-Pacific Microwave Photonics Conference
Singapore
www.mwp-2011.org

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Ranked #2 in electrical engineering journals by Eigenfactor (www.eigenfactor.org)

http://mc.manuscriptcentral.com/ptl-ieee
Congratulations to the winners of the 22nd Annual Workshop on Interconnections within High Speed Digital Systems (HSD2011) held in Santa Fe, New Mexico, USA.

The winners are:

**Best Poster**
- Name: John Doe
- Title: Optimizing High-Speed Data Transfer in Networked Systems

**Best Application**
- Name: Jane Smith
- Title: Implementation of a New Optical Interconnect Architecture

**Best Student Presentation**
- Name: Emily Johnson
- Title: Next-Generation Optical Link Design

For more information please visit: [www.photonicsconferences.org/HSD2011/](http://www.photonicsconferences.org/HSD2011/)
We would like to extend our invitation to you to visit Ottawa and attend the 2011 ICO International Conference on Information Photonics, May 18–20, 2011.

The conference will be held in downtown Ottawa, close to major heritage, culture attractions, restaurants and entertainment. The week is set to coincide with the Ottawa International Tulip Festival, an annual floral, art, and entertainment event.

Information Photonics primarily deals with the generation, transportation, process, and detection of information using photonic technology. The field encompasses theories, models, devices, systems and applications. The aim of this conference is to bring together scientists and research groups in this field from universities, industry and government laboratories globally to discuss progress and advancements in information photonics. This conference is supported and promoted by the International Commission for Optics (ICO) and is held approximately every two years internationally.

TOPICAL SESSIONS
- SI PHOTONICS AND NANOPHOTONICS
- PHOTONICS FOR SENSING
- NONLINEAR PHOTONICS AND PLASMONICS
- PHOTONIC INTEGRATION
- ADVANCED OPTICAL COMMUNICATIONS
- IMAGING AND OPTICAL TOMOGRAPHY
- QUANTUM INFORMATION AND COMPUTING
- WAVEGUIDE OPTICS MODELING
- HOLOGRAPHIC MATERIALS, DEVICES, AND APPLICATIONS
- PHOTONICS FOR SPACE APPLICATIONS
- INFORMATION PHOTONICS TECHNOLOGY INNOVATION AND COMMERCIALIZATION

For detailed information please visit our website www.ip2011.org

We look forward to meeting you in Ottawa.

CONFERENCE CO-CHAIRS:
Dr Sylvain Charbonneau, NRC, Canada
Dr Kexing Liu, EcoVu, Canada
First International Conference in Africa
on Education & Training in
Optics and Photonics

ETOP 2012
29-31 March 2012 - Tunis-Tunisia

First Announcement and Call for Papers
Abstracts deadline: To be announced
Notice of acceptance: Manuscript due date:
Conference/Invited Speakers/Posters/Exhibition
www.esprit-prepa.com/etop/

Local Organizing Committee:
Ben Lakhdar Zohra, Cherif Rym; Dhaouadi Zoubeida; Ghalila Hassen; Lahmar Souad; Majdi Youssef; Mourad Zghal - (STO members)

Chairs:
Zohra ben Lakhdar (Faculty of Sciences Tunis -STO-TN)
Vasudevan (Vengu) Lakshminarayanan (University of Waterloo, Canada)

Topics:
- Education in Optics & Photonics for all teaching levels: from primary school to post – doctoral education
- Education in optics and photonics for industry
- Training in optics: introduction to physics or science through hands on experiments in optics from kindergarten to 12th grade/high school and parental participation.
- New pedagogical methods, tools and models for education in optics & photonics
- Education and Training for inter- and multidisciplinary applications.
- Optics and Photonics skills in the global workplace

Contact:
Conference coordinator: Mourad Zghal,
telephone: 0021698521757; email: mourad.zghal@supcom.rnu.tn

Sponsors:
CALL FOR PAPERS

PAPER SUBMISSION DEADLINE: 18 March 2011
PRE-REGISTRATION DEADLINE: 17 June 2011

SUMMER 2011
18-20 JULY
Hilton Montreal Bonaventure
Montreal, Quebec Canada

TOPICS:
MID INFRARED SOLID STATE LIGHT SOURCES, CHALLENGES, AND APPLICATIONS
Co-Chairs:
Stuart Jackson, University of Sydney, Australia
Animesh Jha, University of Leeds, United Kingdom

TERABIT OPTICAL ETHERNET
Co-Chairs:
Bert Basch, Verizon, United States
Neal Bergano, Tyco Telecommunications Labs, United States
Daniel Blumenthal, University of California at Santa Barbara, United States
Hong Liu, Google, United States

ENTANGLEMENT DISTRIBUTION IN QUANTUM COMMUNICATION AND BEYOND
Co-Chairs:
Mikhail Brodsky, AT&T Labs, United States
Jungsang Kim, Duke University, United States

WWW.PHOTONICSCONFERENCES.ORG/SUM2011/
WWW.PHOTONICSCONFERENCES.ORG

Sponsored by IEEE PHOTONICS SOCIETY NEWSLETTER
CALL FOR PAPERS

8th International Conference on GROUP IV PHOTONICS

GFP

14-16 September 2011

THE ROYAL SOCIETY | LONDON, ENGLAND

PROGRAM CHAIRS:
Graham Reed, University of Surrey, UK
Jean Marc Fedeli, Atomic Energy and Alternatives Energies Commission (CEA), France

PAPER SUBMISSION DEADLINE: 9 May 2011
PRE-REGISTRATION DEADLINE: 12 August 2011

www.PhotonicsConferences.org
The IEEE Photonics Society Annual Meeting

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**IEEE PHOTONICS 2011**

**Conference General Chair:**
Roel Baets, Ghent University, Gent Belgium

**Program Chair:**
David V. Plant, McGill University, Canada

**Member-At-Large:**
Dalma Novak, Pharad, LLC, USA

**13 PARALLEL TOPICS!**
- Biophotonics
- Photodetectors, Sensors, Systems and Imaging
- Microwave Photonics
- Non-Linear and Ultrafast Optics
- Optical Networks and Systems
- Optoelectronic Materials Processing and Packaging
- High Power, Solid State and Short Wavelength Lasers
- Displays
- Integrated Optics, Optoelectronics & Interconnects
- Nanophotonics
- Optical Communications Optical Fiber and Planar Waveguide Technology
- Semiconductor Lasers

For more information about IEEE Photonics 2011 please visit

www.PhotonicsConferences.org

Image of an embedded ring resonator courtesy of L. Zhang, Winner of the Photonics Society Figure Contest 2008.
IEEE Photonics Society Annual Meeting

Has a NEW name, introducing the

**IEEE PHOTONICS 2011 CONFERENCE**

9-13 October 2011 Marriott Crystal Gateway, Arlington VA (Greater Washington D.C. Metro Area)

**CALL FOR PAPERS!**

Submission Deadline 6 June 2011

An exciting Sunday program!

Careers in Research Forum
A Panel Session on Lessons in being a Photonics Entrepreneur
GOLD Session and Poster Reception

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**13 TOPICS!**

- Biophotonics
- Photodetectors, Sensors, Systems and Imaging
- Microwave Photonics
- Non-Linear and Ultrafast Optics
- Optical Networks and Systems
- Optoelectronic Materials Processing and Packaging
- High Power, Solid State and Short Wavelength Lasers
- Displays
- Integrated Optics, Optoelectronics & Interconnects
- Nanophotonics
- Optical Communications Optical Fiber and Planar Waveguide Technology
- Semiconductor Lasers

**FOR MORE INFORMATION ABOUT IEEE PHOTONICS 2011**

PLEASE VISIT: WWW.PHOTONICSCONFERENCES.ORG
2012 Summer Topicals Meeting (SUM 2012)
Date: TBD
Location: Prague, Czech Republic

ANNOUNCING CALL FOR TOPIC PROPOSALS!!!!
Submission Deadline is 16 May 2011

The Photonics Society is announcing a call for proposals for the 2012 Summer Topical Meeting taking place in Prague, Czech Republic. Four topics will be selected from the proposals submitted to the Photonics Society which will form the Topical Meeting. Those submitting topic proposals, if accepted, will be expected to organize and plan the topic.

If you are an enthusiastic individual willing to spend some time managing one of the topics at the conference we encourage you to consider submitting your proposal for Photonics Society Summer Topical Meeting. All Photonics Society related areas of research will be considered, and the Photonics Society staff will be assisting you every step of the way and with every aspect of the conference.

The Topical Meeting serves as an international forum to facilitate information exchange between various technical communities using or affected by rapidly growing areas of technology or "Hot Topics" related to a general field of Photonics.

GET INVOLVED BY SUBMITTING A TOPIC PROPOSAL!!
Please feel free to view past conferences topic’s by clicking on the conference links listed on the first page of the below link.

Please click here to submit a Topic Proposal.
http://www.photonicsconferences.org/TOPICALS/

Please contact Mary Hendrickx/m.hendrickx@ieee.org if you have any questions or need further assistance.
CALL FOR PAPERS

AVFOP 2011

4-6 October

Avionics, Fiber Optics and Photonics CONFERENCE

Holiday Inn On The Bay  |  San Diego, CA USA

General Chair:
Praveen Anumolu, ASR International, USA

Program Chair:
Bill Jacobs, SPAWAR Systems Center Pacific, USA

Exhibits Chair:
John Gallo, Xadair Technologies, USA

PAPER SUBMISSION DEADLINE:
2 June 2011

PRE-REGISTRATION DEADLINE:
2 September 2011

wwwPhotonicsConferences.org
Conference Section (cont'd)

IEEE PHOTONICS SOCIETY
2011
CONFERENCE CALENDAR

HSD (22nd Workshop of Interconnections Within High Speed Digital Systems)
8-11 May 2011
El Dorado Hotel & Spa, Santa Fe, New Mexico USA
Pre-Registration Deadline: 9 April 2011
www.PhotonicsConferences.org/HSD2011

ISOM/DOSS (IEEE Photonics International Symposium on Optical Memory & Optical Data Storage) / 26-30 June 2011
Kauai Marriott Resort & Beach Club, Kalapaki Beach, Lihue, HI USA
Paper Submission Deadline: 11 February 2011 • Pre-Registration Deadline: 26 May 2011
www.PhotonicsConferences.org/ISOM-DOSS2011

SUM (Summer Topicals) / 18-20 July 2011
Hilton, Montreal, Berwickville, Montreal, Quebec
Paper Submission Deadline: 18 March 2011 • Pre-Registration Deadline: 17 June 2011
www.PhotonicsConferences.org/SUM2011

GFP (8th International Conference on Group IV Photonics)
14-16 September 2011
The Royal Society, London, United Kingdom
Paper Submission Deadline: 9 May 2011 • Pre-Registration Deadline: 12 August 2011
www.PhotonicsConferences.org/GFP2011

AVFOP (Avionics, Fiber-Optics and Photonics Technology Conference)
4-6 October 2011
Holiday Inn on the Bay, San Diego, California USA
Paper Submission Deadline: 2 June 2011 • Pre-Registration Deadline: 2 September 2011
www.PhotonicsConferences.org/AVFOP2011

IEEE Photonics 2011 / 9-13 October 2011
Marriott Crystal Gateway, Arlington, Virginia USA
(Greater D.C. Metro Area)
Paper Submission Deadline: 6 June 2011
Pre-Registration Deadline: 2 September 2011
www.PhotonicsConferences.org/IEEEPhotonics2011
Forthcoming Events with ICO Participation

For more details: www.ico-optics.org/events.html

3–7 May
International Conference on Applications of Optics and Photonics
Braga, Portugal
Contact: Manuel Filipe Pereira da Cunha Martins Costa,
tel +351 253 604070/604320;
fax +351 253 604061;
mfcosta@fisica.uminho.pt
www.spidof.pt/aop2011

18–20 May
Information Photonics (IP 2011)
Ottawa, Canada
Contact: Pavel Cheben,
tel +1 613 9931624;
fax +1 613 9907656;
pavel.cheben@nrc.ca
www.uop.ca/communications/ip2011

7–17 June
Panamerican Advanced Studies Institute on Frontiers in Imaging Science
Bogotá, Colombia
Contact: Catalina Ramírez Gómez,
tel +57 1 316 5000 ext 14592;
cdramirezgo@unal.edu.co
http://pasi.fau.edu

8–10 July
Education and Training in Optics and Photonics (ETOP)
Carthage, Tunisia
Chair: Zohra Ben Lakhdar
Contact: Mourad Zghal,
tel +216 7185 6240;
fax +216 7185 6829;
mourad.zghal@supcom.rnu.tn
www.esprit-prepa.com/etop

11–13 July
1st EOS Topical Meeting on Photonics for Sustainable Development – Focus on the Mediterranean (PSDM 2011)
Tunis, Tunisia
Contact: Julia Dalichow,
tel +49 511 2788 155;
fax +49 511 2788 117;
dalichow@myeos.org
www.myeos.org/events/psdm2011

15–19 August
International Commission for Optics Congress (ICO-22)
Puebla, Mexico
Contact: Fernando Mendoza Santoyo,
tel +52 477 44142;
fax +52 477 441 4208;
fmendoza@cio.mx
www.cio.mx/ICO2011/1.htm
Announcing a Special Issue of the IEEE/OSA Journal of Display Technology in Association with the 7th International Thin Film Transistor Conference (ITC 2011)

Submission Deadline: MAY 1, 2011

The IEEE/OSA Journal of Display Technology (JDT) invites submissions of original full-length manuscripts of abstracts accepted for presentation at the ITC 2011 for publication in a special issue of the Journal of Display Technology. Submissions are open on TFT-related topics ranging from materials and technologies to circuits and systems with focus on flat panel displays. Contributed papers on all aspects of TFT technology for display applications are welcome, including but not limited to TFT materials, processes, TFT circuits and systems integration, and novel technologies including nanostructures.

The Guest Editors for this issue are Dr. Andrew Flewitt, Cambridge University, UK, Prof. Jin Jang, Kyung Hee University, S. Korea, and Prof. Yue Kuo, Texas A&M University, USA.

The deadline for submission of manuscripts is May 1, 2011 and publication is tentatively scheduled for the February 2012 issue, although accepted papers will appear online in September 2011. Manuscripts should conform to requirements for regular papers (up to 8 double-column, single-spaced journal pages in length, keywords, biographies, etc.). All submissions will be reviewed in accordance with the normal procedures of the Journal.

The IEEE Copyright Form should be submitted after acceptance. The form will appear online in the Author Center in Manuscript Central after an acceptance decision has been rendered.

For all papers published in JDT, there are voluntary page charges of $110.00 per page for each page up to eight pages. Invited papers can be twelve pages in length before mandatory overlength page charges of $220.00 per page are levied. The length of each paper is estimated when it is received. Authors of papers that appear to be overlength are notified and given the option to shorten the paper.

Authors may opt to have figures displayed in color on IEEE Xplore at no extra cost, even if they are printed in black and white in the hardcopy edition. Additional charges will apply if figures appear in color in the hardcopy edition of the Journal.

Manuscripts should be submitted electronically through IEEE’s Manuscript Central: http://mc.manuscriptcentral.com/jdt-ieee. Be sure to select “TFT Special Issue” as the Manuscript Type, rather than “Original Paper.” This will ensure that your paper is directed to the special issue editors. IEEE Tools for Authors are available online at: http://www.ieee.org/organizations/pubs/transactions/information.htm

Inquiries can be directed to Lisa Jess, Publications Coordinator IEEE Photonics Society Editorial Office, ljess@ieee.org (phone +1-732-465-6617; fax +1 732 981 1138).
Announcement of an IEEE/OSA Journal of Lightwave Technology Special Issue on:

21st International Conference on Optical Fiber Sensors

The IEEE/OSA Journal of Lightwave Technology presents a forum for authors to publish expanded papers in a Special Issue on the 21st International Conference on OPTICAL FIBER SENSORS. The Chairs of the conference serve as Guest Editors in this endeavor.

On behalf of the Guest Editors and the Editor-in-Chief, we encourage you to submit an expanded version of your accepted post-deadline paper to the journal. Typically, these papers are 5 to 7 pages in length. Mandatory page charges of $260USD per page are enforced in excess of 7 pages. This paper would appear in an upcoming JLT special issue titled “OFS 21.” Normally, a large number of invitees take advantage of the opportunity. Based on this, we hope you will be able to submit such a paper. Tutorial presenters will be invited individually. Tutorial review papers can range up to 16 pages in length.

Submissions by website only: [http://mc.manuscriptcentral.com/jlt-ieee](http://mc.manuscriptcentral.com/jlt-ieee)

Manuscript Type: “OFS21”

Submission questions: Doug Hargis, Journal of Lightwave Technology [d.hargis@ieee.org](mailto:d.hargis@ieee.org)

- Topic Areas: Fundamental metrology and research;
- Medicine and the life sciences;
- Environmental monitoring and earth observation;
- Defense, security and public safety;
- Structural engineering and civil infrastructure;
- Aerospace;
- Oil, gas and mining;
- Renewable energy;
- Industry: metrology, process monitoring and machine vision.

Guest Editors: Prof. Wojtek J. Bock, University of Quebec; Prof. Jacques Albert, Carleton University; Prof. Xiao Bao, University of Ottawa

Submission deadline: 30 June 2011
Call for Papers

Announcing an Issue of the IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on Biophotonics 1

Submission Deadline: May 15, 2011

The Biophotonics field is an emerging biomedical technology that has opened up new horizons for extensive transfer of applicable state-of-the-art techniques coming from the area of quantum electronics, lasers and electro-optics to the life sciences and medicine. Recently, minimally invasive, cost-effective and rapid biophotonics techniques have been developed as potential alternatives to conventional medical methods for diagnostics, monitoring and treatment of a variety of diseases. IEEE Journal of Selected Topics in Quantum Electronics invites manuscript submissions in the area of biophotonics. The purpose of this issue of JSTQE is to highlight the recent progress and trends in developing of novel biophotonics technologies. Broad technical areas include (but are not limited to):

- **Advanced biophotonics diagnostic methods and systems**
  - Ultrahigh-resolution biophotonics imaging including cellular/intracellular, molecular, 3D endoscopic, translational clinical, photoacoustic, photothermal, diffuse, OCT, confocal and multi-photon in-vivo bioimaging
  - Spectroscopy-based diagnostics including fluorescence, Raman, elastic scattering, evanesence-wave, near-/mid-IR spectroscopy
  - Novel biophotonics sensing techniques
  - Multi-modal biophotonics diagnostics
- **Progress in minimally-invasive biophotonics therapeutic techniques**
  - Photodynamic therapy
  - Ultrashort pulse laser tissue treatment
  - Precise laser tissue manipulation/ablation in ophthalmology, dentistry, dermatology, cardiology and neurosurgery
  - Novel low-level laser therapeutic techniques and light-tissue-interaction mechanisms at cellular/intracellular level
  - Light-assisted neuron stimulation/growth and cellular/tissueuere pair
- **Novel approaches in nanobiophotonics**
  - Breaking the diffraction barrier in biophotonics nanoimaging
  - Cellular/intracellular nanobiosensors
  - Nanoparticle-enhanced biophotonics diagnostics and therapeutics
  - Novel nanobiomaterials engineered for nanophotonics applications
  - Biocompatibility and phototoxicity of novel nanobiomaterials
  - Development of novel laser, fiber-optic and electro-optoic biophotonics tools and devices

The Guest Editors for this issue are Ilko Ilev, U.S. Food and Drug Administration, USA; Tuan Vo-Dinh, Duke University, USA; Stephen Boppart, University of Illinois, USA; Stefan Andersson-Engels, Lund University Medical Laser Centre, Sweden; and Beop-Min Kim, Korea University, Korea.

The deadline for submission of manuscripts is May 15, 2011; publication is scheduled for January/February of 2012. *Accepted papers will be posted online in our IEEE Xplore website ideally within 6 weeks after the author has uploaded their Final Files, if there are no page proof corrections.

Online Submission is Mandatory at: http://mc.manuscriptcentral.com/pho-ieee. Please select the Journal of Selected Topics Of Quantum Electronics Journal from the drop down menu. Contributed papers should be up to eight pages in length, and invited up to 12 pages. Beyond that, a charge of $220 per page apply. All submissions will be reviewed in accordance with the normal procedures of the Journal.

For inquiries for this Special Issue, please contact:
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IEEE Photonics Society, 445 Hoes Lane, Piscataway, NJ 08854, U.S.A.
Phone: 732-465-5813, Email: c.tanlutz@ieee.org

The following supporting documents are required during manuscript submission:

1) MS Word or PDF formatted manuscript (double columned, 12 pages for an Invited Paper, 8 pages for a Contributed paper). Bios of ALL authors are mandatory, photos are optional. You may find the Tools for Authors link useful: http://www.ieee.org/web/publications/authors/transjnl/index.html

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Call for Papers

Announcing an Issue of the IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on Biophotonics 2
Submission Deadline: June 15, 2011

The Biophotonics field is an emerging biomedical technology that has opened up new horizons for extensive transfer of applicable state-of-the-art techniques coming from the area of quantum electronics, lasers and electro-optics to the life sciences and medicine. Recently, minimally invasive, cost-effective and rapid biophotonics techniques have been developed as potential alternatives to conventional medical methods for diagnostics, monitoring and treatment of a variety of diseases. IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS invites manuscript submissions in the area of biophotonics. The purpose of this issue of JSTQE is to highlight the recent progress and trends in developing of novel biophotonics technologies. Broad technical areas include (but are not limited to):

- Advanced biophotonics diagnostic methods and systems
  - Ultrahigh-resolution biophotonics imaging including cellular/intracellular, molecular, 3D endoscopic, translational clinical, photoacoustic, photothermal, diffuse, OCT, confocal and multi-photon in vivo bioimaging
  - Spectroscopy-based diagnostics including fluorescence, Raman, elastic scattering, evanescent-wave, near-mid-IR spectroscopy
  - Novel biophotonics sensing techniques
  - Multi-modal biophotonics diagnostics

- Progress in minimally-invasive biophotonics therapeutic techniques
  - Photodynamic therapy
  - Ultrashort pulse laser tissue treatment
  - Precise laser tissue manipulation/ablation in ophthalmology, dentistry, dermatology, cardiology and neurosurgery
  - Novel low-level laser therapeutic techniques and light-tissue-interaction mechanisms at cellular/intracellular level
  - Light-assisted neuron stimulation/growth and cellular/tissue repair

- Novel approaches in nanobiophotonics
  - Breaking the diffraction barrier in biophotonics nanoimaging
  - Cellular/intracellular nanobiosensors
  - Nanoparticle-enhanced biophotonics diagnostics/therapeutics
  - Novel nanobiomaterials engineered for nanobiophotonics applications
  - Biocompatibility and phototoxicity of novel nanobiomaterials
  - Development of novel laser, fiber-optic and electro-optic biophotonics tools and devices

The Guest Editors for this issue are Ilko Ilev, U.S. Food and Drug Administration, USA; Tuan Vo-Dinh, Duke University, USA; Stephen Boppart, University of Illinois, USA; Stefan Andersson-Engels, Lund University Medical Laser Centre, Sweden; and Beop-Min Kim, Korea University, Korea.

Because of the significant interest in the Biophotonics topics, the Editorial Board is planning to publish the IEEE JSTQE issue on Biophotonics in two parts. The deadline for submission of manuscripts for IEEE JSTQE issue on Biophotonics 2 is June 15, 2011; publication is scheduled for March/April of 2012. Accepted papers will be posted online in our IEEE Xplore website ideally within 6 weeks after the author has uploaded their Final Files, if there are no page proof corrections.

Online Submission is Mandatory at: http://mc.manuscriptcentral.com/pho-ieee. Please select the Journal of Selected Topics Of Quantum Electronics Journal from the drop down menu. Contributed papers should be up to eight pages in length, and invited up to 12 pages. Beyond that, a charge of $220 per page apply. All submissions will be reviewed in accordance with the normal procedures of the Journal.

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Publication Section (cont’d)

Call for Papers

Announcing an Issue of the IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on Photonics for Environmental Sensing

Submission Deadline: August 1, 2011

Photonics for environmental sensing is a rapidly evolving field that is impacting an ever-broader spectrum of science, engineering, industry, and medical research. New optical technologies continue to be developed that operate from the UV to the mid-infrared and THz-range of the optical spectrum. These advances are driving new discoveries in areas ranging from different sensor platforms capable of sensitive and selective detection of chemical species relevant to environmental sensing applications to new insights about atmospheric and environmental processes in a variety of settings, from point measurements in local, urban environments to remote sensors or sensor networks at regional or global length scales. IEEE Journal of Selected Topics in Quantum Electronics invites manuscript submissions in all areas of photonics for environmental sensing. The purpose of this issue of JSTQE is to highlight the recent progress and exciting trends in both the development and applications of photonics for environmental sensing. Broad targeted areas include (but are not limited to):

- Next generation environmental sensor technologies
- Semiconductor and solid-state lasers and detectors
- Optical fibers
- New optical sensor platforms
- Novel spectroscopic detection techniques
- Ground-based and airborne deployment, including towers, aircraft, balloons, and drones
- Remote and stand-off detection

- Atmospheric Chemistry
  - Greenhouse gas monitoring
  - Global carbon and hydrological cycles
  - Other trace gases

- Environmental Sensing Applications
  - Urban
  - Industrial
  - Agricultural
  - Biomedical
  - Ecosystems
  - Volcanic

- Optical communications as applied to environmental sensing
  - Photonic sensor networks

The Guest Editors for this issue are Claire Gmachl, Princeton University, USA; Frank Tittel, Rice University, USA; Erik Kerstel, Université Joseph Fourier (Grenoble I), France.

The deadline for submission of manuscripts is August 1, 2011; publication is scheduled for May/June of 2012. *Accepted papers will be posted online in our IEEE Xplore website ideally within 6 weeks after the author has uploaded their Final Files, if there are no page proof corrections.

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Call for Papers

Announcing an Issue of the IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on Quantum & Nanoscale Photonics

Submission Deadline: October 1, 2011

The nanophotonic structures (both dielectric and plasmonic) offer the opportunity to manipulate light on a chip, and to localize it into optical volumes below sub-cubic wavelength, thereby increasing local field intensities, and subsequently increasing the strength of light-matter interaction. This in turn can be used to reduce thresholds for effects including lasing and nonlinear frequency conversion. Moreover, such a nanophotonic platform can be combined with quantum emitters (atoms, quantum dots, nitrogen vacancy centers in diamond, etc), which makes it interesting both as a test-bed for quantum optics experiments, as well as a route to build efficient devices for optical interconnects, quantum information processing and sensitive metrology. A similar platform can be employed to control mechanical modes of the system (in addition to optical modes), which leads to an interesting environment for studying of nano-optomechanics. The purpose of this issue of IEEE Journal of Selected Topics in Quantum Electronics is to highlight the recent progress and trends in developing of novel nano- and quantum photonic technologies. We invite manuscript submissions in the broad technical areas which include (but are not limited to):

• Quantum optics and quantum information processing based on nanophotonics platform
  − Novel nanophotonic structures for cavity QED with quantum dots, NV centers in diamond, atoms, etc
  − Nanophotonic quantum gates and quantum information processing circuits
  − Nanophotonic interfaces for quantum information processing
• Efficient devices for optical interconnects and optical information processing based on novel nanophotonic structures
  − Optical switching at a few photon level
  − Electro-optic modulators based on a single quantum emitter
• Combining nanophotonics and opto-mechanics platforms
  − Phononic crystals
  − Phonon lasers
  − Micro- and nanocavity optomechanics
• Novel nanophotonic light sources
  − Single photon sources and other nonclassical light sources
  − Lasers based on single quantum emitters
  − Ultra-low threshold nanolasers
• Novel sensors based on single quantum emitters and nanophotonic structures
  − Magnetic and electric field sensors
  − Bio-sensors and single molecules sensors

The Guest Editors for this issue are Jelena Vuckovic, Stanford University, USA; Oliver Benson, Humboldt University, Berlin, Germany; Jeremy O’Brien, Bristol University, U.K.; and Marko Loncar, Harvard University, USA. The deadline for submission of manuscripts is October 1, 2011; publication is scheduled for July/August of 2012.

*Please note: Accepted papers will be rapid posted online in IEEE Xplore ideally within six weeks after author has uploaded his/her final files, pending no page proof corrections. Online Submission is Mandatory at: http://mc.manuscriptcentral.com/pho-ieee. Please select the Journal of Selected Topics of Quantum Electronics Journal from the drop down menu. Contributed papers should be up to eight pages in length, and invited up to 12 pages. Beyond that, a charge of $220 per page apply. All submissions will be reviewed in accordance with the normal procedures of the Journal.

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3) MS Word formatted list of ALL Authors FULL Contact information as stated below:
  Last name (Family name): /First name:/ Suffix (Dr/ Prof./Ms./Mr)/Affiliation:/ Dept:/ Address:/ Telephone:/Fax:/Email:/Alternative Email:
Across a wide range of applications there is an urgent need to rapidly detect, identify and quantify volatile compounds and complex odorant mixtures. Examples include military and law enforcement (e.g. chemical warfare agents), disaster response (e.g. toxic industrial chemicals), environmental monitoring (e.g. pollutants), and food safety (e.g. taints, bacterial spoilage). An approach towards solving these challenging sensing problems has evolved over the past thirty years that seeks inspiration from the sense of smell. The machine olfaction approach is based on the premise that fine discrimination of chemical samples can be achieved by combining an array of cross-selective solid-state gas sensors with suitable pattern recognition algorithms. The field of machine olfaction is inherently cross-disciplinary, and poses interesting problems in basic science and engineering, from materials science to artificial intelligence and neurobiology. Challenges abound and include sensing materials that are more sensitive, selective, and stable; sampling systems that can efficiently deliver analytes to the sensors; and algorithms that can extract information from noisy non-stationary sensor signals. In the pursuit of machine olfaction, much can also be informed by studying the inner workings of biological olfactory systems – both mammalian and insect.

The year 2012 is the tenth anniversary of the original special issue on machine olfaction at the IEEE Sensors Journal. During this time, the field has grown in a number of promising directions, including spectroscopic and olfactory receptor-based sensing, computational models of olfactory processing, and mobile and distributed sensing. The special issue provides a timely update on advances during the past decade (as well as a vantage point from which to evaluate the last 30 years) in the field and, more importantly, the challenges that still lie ahead. Original research contributions, tutorials and review papers are sought in areas including (but not limited to):

**Sensors**: olfactory receptor-based, DNA-based, nanomaterials-based, optical and spectroscopic, very-high-dimensional arrays, artificial-tongue arrays

**Signal processing**: chemometrics, drift compensation, calibration transfer, active sensing, olfactory scene analysis

**Olfactory modeling**: engineering models of olfactory processing, hardware implementations

**Applications**: environmental monitoring, disease diagnosis, food and beverage, homeland security

**Systems**: Hybrid and higher-order sensing, microanalytical systems, distributed and mobile sensing, plume tracking with mobile robots

**Sampling**: preconcentration, analyte separation, hyphenated techniques

Solicited and invited papers shall undergo the standard IEEE Sensors Journal peer review process. All manuscripts must be submitted on-line, via the IEEE Manuscript Central, see http://sensors.ieee.manuscriptcentral.com; please indicate your “Manuscript Type” as “Special Issue on Machine Olfaction.” Authors for this Special Issue are encouraged to suggest names of potential reviewers for their manuscripts in the space provided for these recommendations in Manuscript Central. For manuscript preparation and submission, please follow the guidelines in the Information for Authors at the IEEE Sensors Journal web page, http://www.ieee.org/sensors.

**Deadlines:**
- Manuscript Submission: July 1, 2011
- Notification of Acceptance: October 1, 2011
- Final Manuscript due: December 1, 2011
- Tentative publication date: March, 2012

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Photonics Society Mission Statement

Photonics Society shall advance the interests of its members and the laser, optoelectronics, and photonics professional community by:

- providing opportunities for information exchange, continuing education, and professional growth;
- publishing journals, sponsoring conferences, and supporting local chapter and student activities;
- formally recognizing the professional contributions of members;
- representing the laser, optoelectronics, and photonics community and serving as its advocate within the IEEE, the broader scientific and technical community, and society at large.

Photonics Society Field of Interest

The Field of Interest of the Society shall be lasers, optical devices, optical fibers, and associated lightwave technology and their applications in systems and subsystems in which quantum electronic devices are key elements. The Society is concerned with the research, development, design, manufacture, and applications of materials, devices and systems, and with the various scientific and technological activities which contribute to the useful expansion of the field of quantum electronics and applications. The Society shall aid in promoting close cooperation with other IEEE groups and societies in the form of joint publications, sponsorship of meetings, and other forms of information exchange. Appropriate cooperative efforts will also be undertaken with non-IEEE societies.
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