



EXHIBITOR PRODUCT SHOWCASE

CALL FOR INDUSTRIAL WORKSHOP PRESENTATION

We invite you to submit proposals to present your technology in the Photronics North 2006 **Exhibitor Product Showcase**. The Product Showcase will place particular emphasis on **Remote Optics***.

** Remote Optics encompasses many fields including remote detection, surveillance and sensing, in-situ testing, data gathering at distance, data transfer as well as photonic sources and detectors.*

Accepted presentations will entitle your company to make a 30 minute presentation in this **special showcase**. See our website for complete details.

We are soliciting presentations targeting potential new users of existing technologies with the aim of broadening the market for your products.

The showcase will be specifically promoted to those industries identified by the presenting companies as having a potential to integrate these technologies into their industrial processes. These industries will be targeted by making full use of the assistance of governments economic development departments, advertising in trade publications and mailing lists.

OPPORTUNITIES

- WORKSHOP BUSINESS PRESENTATIONS AVAILABLE TO SHOWCASE YOUR PRODUCTS/APPLICATIONS
- FIND NEW VENUES FOR YOUR PRODUCT DEVELOPMENT
- COMPLETE PROMOTIONAL SUPPORT FROM ALL ECONOMIC DEVELOPMENT AGENCIES
- GREAT EXHIBITOR EXPOSURE VIA THE PHOTONICS NORTH MAIN EXHIBITION
- A CHANCE TO DISCOVER UNIQUE BUSINESS OPPORTUNITIES WITH A MINIMUM OF TIME & ENERGY
- PROMOTE NEW TECHNOLOGY TRANSFERS
- INTERNATIONAL NETWORKING
- SALES LEAD GENERATION THROUGH NEW FIELD/AREA BUYERS
- EXPAND YOUR PRODUCT/TECHNOLOGY MANUFACTURING AND DEVELOPMENT RANGE THROUGH OTHER RELATED TECHNOLOGIES

BRING YOUR PRODUCTS TO LIGHT!

PLAN NOW TO EXHIBIT AT PHOTONICS NORTH
6-7 JUNE 2006

WWW.PHOTONICSNORTH.COM

FOR MORE INFORMATION PLEASE CONTACT:

QUEBEC PHOTONIC NETWORK Jacques Labelle Executive Director (514) 368-2098
PHOTONICS NORTH Michel Walters Exhibits Coordinator (418) 522-8182



Photonics North

2006

PHOTONICS NORTH
5-8 JUNE 2006

QUÉBEC CITY CONVENTION CENTRE
Québec, Canada

SUBMIT YOUR ABSTRACT TODAY!

CONFERENCES | COURSES | EXHIBITION

- ULTRA-SHORT PULSE OPTICS :
LASERS, SOURCES & APPLICATIONS
- NEW OPTICAL MATERIALS / OPTICAL MEMORIES
- PHOTONIC DEVICES
- GUIDED WAVES DEVICES
- INDUSTRIAL APPLICATIONS OF OPTICS :
MATERIAL PROCESSING AND CHARACTERIZATION
- NANO-PHOTONICS AND PHOTON-BASED
ATOMIC LEVEL MANIPULATION
- FIBER LASERS AND AMPLIFIERS :
DEVELOPMENT & APPLICATIONS
- BIOPHOTONICS AND MEDICAL APPLICATIONS

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 **SPIE** The International Society
for Optical Engineering



Réseau photonique du Québec
Quebec Photonic Network

ULTRA-SHORT PULSE OPTICS: LASERS, SOURCES & APPLICATIONS

Conference Chair

JEAN-CLAUDE KIEFFER
INRS ÉNERGIE

World wide, there is a major research effort on developing compact high power lasers and amplifiers. New approach to investigation of matter, from imaging to therapy, will emerge from the combination of major advances in laser technology and optical measurements. Connecting researchers developing lasers with other researchers developing new applications is a continuing challenge. The goal of this Conference is to bridge the gap between the enabling technology developers and researchers exploring new applications.

Topics will include:

- 1- ULTRAFAST LASER
- 2- ATTOSECOND SOURCES
- 3- HIGH FIELD PHYSICS
- 4- LASER PARTICLE ACCELERATION
- 5- DYNAMIC MOLECULAR IMAGING AND ULTRAFAST PHASE TRANSITION PROCESSES; NON-LINEAR PHYSICS IN MOLECULES, CLUSTERS AND SOLIDS

NEW OPTICAL MATERIALS / OPTICAL MEMORIES

Conference Chair

ROGER A. LESSARD
UNIVERSITÉ LAVAL

This seminar intends to bring together all scientists interested in optical materials development and their applications. Materials is often the bottleneck that stop the development of profitable applications but there are at present a lot of exciting new advances in this field. For example new materials for ultra dense optical data storage are rapidly evolving toward their widespread uses.

We expect receiving participation from all scientists interested in polymers, doped-polymers, grafted polymers, liquid-crystals-dispersed polymers. Interest in biopolymers is increasing and researches might lead to major progress. In Optical Sciences and Optical Engineering there are also many efforts devoted to glass, such as silica and chalcogenide glasses. Finally, new developments will also come from the ability to make good photonic band gap materials.

All these materials and their applications will be considered and discussed.

PHOTONIC DEVICES

Conference Chair

KARIN HINZER
BOOKHAM TECHNOLOGY

Conference co-Chairs

PATRICK LANGLOIS

JDS UNIPHASE

BENOIT REID

PYROPHOTONICS LASERS INC

NORBERT PUETZ

AGILITY COMMUNICATIONS

Photonic components and devices are being used in a wide array of applications in telecommunications, solar cells, scientific instrumentation, data storage, biomedical, automotive and military applications. Research on new materials, processes and components are giving rise to devices which have larger efficiencies, better integration, higher functionality and longer life. Examples are short wavelength semiconductor lasers, long wavelength tunable sources, integrated passives, actives and optoelectronic integrated circuits (OEICs). New package designs and reliability methodologies must be developed as these devices increase in functionality and integration.

Experimental and theoretical papers are solicited in all areas of photonic devices, in particular:

- sensors, photodetectors and solar cells
- optoelectronic epitaxy and fabrication techniques
- optical MEMS + MOEMS
- arrayed waveguide devices and planar lightwave circuits
- New materials such as dilute nitrides, III-V nitrides, antimonides, magnetic-doped semiconductors, devices on metamorphic substrates
- Applications of low-dimensional semiconductors (nanotubes, porous silicon, quantum dots, photonic bandgap materials)
- Optical isolators, splitters, directional couplers
- Dielectric-layer interference devices, new optical filters
- Organic/polymeric/hybrid semiconductors, organic thin-film transistors and LED, liquid crystals
- Hybrid integration and packaging, III-V and silica integrated optics, wafer fusing
- Reliability testing
- Packaging solutions (small-form factors, flip-chip bonding, transceivers, low cost packaging)

GUIDED WAVES DEVICES

Conference Chair

R. KASHYAP
ECOLE POLYTECHNIQUE

Optical waveguides have become an essential part of photonics. Applications using couplers, modulators, lasers and photodiodes for telecommunications, highly efficient nonlinear frequency converters using periodically poled devices, sensors and signal processors have become widely available in the photonics industry. New applications of waveguides in bio-photonics, non-invasive detection of bio-hazards, metrology using surface plasmons and other waveguides and microwave applications such as radio-over fibre are also developing rapidly. Papers on novel applications and devices such as doped photosensitive waveguides, nonlinear mixing, and integration with photonics band-gap materials, guided wave sensing and also fibre optic devices are solicited for this meeting.

Topics include:

1) TECHNOLOGY RELATED TOPICS

- Fabrication and modelin of novel fibre devices
- Implementation and fabrication of Bragg gratings
- Fabrication of guided wave PBG structures
- Fabrication and measurement of active devices
- Fabrication of periodically poled devices
- Novel techniques for fabricating waveguides
- Photosensitivity of waveguides and fibres
- Packaging of waveguides

2) APPLICATIONS, AMONGST OTHERS

- Novel nonlinear devices
- Dispersion compensating devices
- Guided wave optical filters
- Measurements of waveguide devices, including dispersion and PMD
- Waveguide amplifiers, modulators and signal processors
- Integrated optic devices
- Optical signal processing devices
- Optical sensing using waveguides

INDUSTRIAL APPLICATIONS OF OPTICS: MATERIAL PROCESSING AND CHARACTERIZATION

Conference Chair

JEAN PIERRE MONCHALIN
CNRC-IMI

Optics and lasers offer unique capabilities for industrial materials fabrication and diagnostics and are increasingly used in many industries for a wide range of applications. This conference will feature these applications with a particular focus on the ones that have been transferred from the laboratory to industry or at the stage of prototype or pilot production. Topics to be considered include in particular:

1) DIAGNOSTICS TECHNIQUES FOR INDUSTRIAL PRODUCTS OR MATERIAL CHARACTERIZATION OR PROCESS SENSING,

such as measurement of shapes or profiles by scanning techniques

- Laser triangulation
- Optical Coherence
- Tomography... or full field techniques
- Structured light
- Holography
- Speckle interferometry
- Shearography
- Moiré...

measurement of chemical composition by optical spectroscopy

- IR, Raman
- Laser Plasma Spectroscopy... techniques that combine optics and acoustics
- Photo-thermo-acoustics
- Laser-ultrasonics... signal processing and imaging techniques for industrial diagnostics, etc.

2) FABRICATION TECHNIQUES,

such as laser cutting, drilling marking and welding, laser cladding and surface modification, laser-assisted deposition and consolidation, laser-shock peening and laser bending, laser micro-machining, laser nano-fabrication...

EXHIBITOR PRODUCT SHOWCASE
CALL FOR INDUSTRIAL WORKSHOP PRESENTATION

NANO-PHOTONICS AND PHOTON-BASED ATOMIC LEVEL MANIPULATION

Conference Chairs

J.J. DUBOWSKI

UNIVERSITÉ DE SHERBROOKE

STOYAN TANEV

VITESSE RE-SKILLING INC.

Nanophotonics can be conceptually divided into three major parts. First, there is the confinement of light and photon-matter interactions on a nanometer size scale. It requires the full variety of new and existing photonics science and engineering techniques to control and manipulate light properties at a nanometer scale as well as the possibility to use confined photons for the manipulation and visualization of atoms and molecules. Second, there is the confinement of matter to nanoscale dimensions, thereby limiting interactions between light and matter to nanoscopic dimensions. This defines the field of nanomaterials. Third, there is the nanoscale confinement of photochemical photoprocess or of light-induced phase changes. This approach provides methods for nanofabrication of photonic structures, functional units and devices. Nanophotonics and photon-based technologies have created exciting opportunities and enabled new technologies with significant potential impact in a variety of areas such as communications, consumer electronics, automotive industry, fundamental science and engineering research tools, biomedical sciences, environmental monitoring, security and defense.

We will be considering contributions in the following or closely related areas:

- Photon-assisted methods for nanomaterial synthesis and fabrication (including surface nano-modification)
- Nano-scale devices for engineering and biomedical applications: design, simulation and fabrication
- Photon based tools for nano-bio-chemical applications
- Advanced nanophotonics simulation tools
- Sub-wavelength grating and PBG based nanostructures and devices
- Photon-based methods for atomic level manipulation

FIBER LASERS AND AMPLIFIERS: DEVELOPMENT & APPLICATIONS

Conference Chairs

ANDRÉ PARENT

INO

YVES TAILLON

INO

The growing interest in the field of fiber lasers and amplifiers is powered by its potential for offering very high efficiency low cost devices operating in CW as well as in pulsed mode and with diffraction-limited output beams. Nowadays fiber lasers deliver a few kilowatts of CW power and multi-kilowatt peak power pulses. Moreover, many activities are now devoted to very short pulse fiber lasers emitting pulses of a few tens of femto-seconds and with very good M2 values. The rapid development in the fiber lasers and amplifiers field benefits from the development of high power and high brightness pumps, new pumping schemes, new active fibers configurations with large mode area (LMA). Topics for this conference include all new technological developments for improved fiber lasers and amplifiers and will include developments in optical fiber reliability. It will also cover special applications of fiber lasers or fiber laser systems with adapted features.

Topics include:

1) TECHNOLOGY RELATED TO FIBER LASERS AND AMPLIFIERS:

- New dopants and active fibers geometry including Large Mode Area and micro-structured fibers.
- Laser diode pump coupling and new pumping schemes
- Active fibers reliability
- Narrow-linewidth optical fiber sources
- Nonlinear effects and frequency conversion including, pulse interactions, ultrafast phenomena, supercontinuum generation and modeling.

2) APPLICATIONS:

- Sensing
- Materials processing & microfabrication
- Biomedical applications

BIOPHOTONICS AND MEDICAL APPLICATIONS

Conference Chairs

LUC BEAULIEU

CHUQ

YVES DE KONINCK

CHUQ (HOPITAL ROBERT GIFFARD)

Biophotonics relates to the use of photons (light), optical methods and instrumentations to image, detect, diagnose, manipulate and treat cells, tissues and diseases like cancer in innovative non-invasive (or minimally invasive) approaches.

Papers are solicited in all areas of Biomedical Photonics, in particular on new optical methods, instrumentations and techniques for:

- Photonics in neurosciences: brain cell and brain function
- Optical tomography
- Optical biopsy
- Photodynamic therapy and photothermal therapy
- Application of photonics methods to oncology, ophthalmology, genetic diseases...
- Spectroscopy imaging
- Optical biosensors
- Light delivery and monitoring for the above applications



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