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Sunil K. Khijwania
Banshi D. Gupta
Bishnu P. Pal
Anurag Sharma
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Introduction

Welcome to one of the most beautiful and mountainous cities in India located on the bank of the mighty Brahmaputra River, Guwahati - considered the gateway of North East India that offers a perfect blend of picturesque natural beauty, Indian heritage and the appeal of a modern city – and welcome to the Tenth International Conference on Fiber Optics & Photonics "PHOTONICS 2010." The International Conference on Fiber Optics and Photonics (PHOTONICS) is a biennially held conference in India. It was an historical moment when the first conference, then christened as CEOT, was founded by the visionary scientist, Prof. Selvarajan, at Indian Institute of Science in 1992. It might not have been imagined at that time that CEOT-92 would lead to the foundation of a global brand.

CEOT continued in 1994 at the same institute. It was re-christened "PHOTONICS" and made history in its successive incarnations at Madras (now Chennai) in 1996, Delhi in 1998, Calcutta (now Kolkata) in 2000, Bombay (now Mumbai) in 2002, Cochin in 2004, Hyderabad in 2006 and Delhi again in 2008. With each incarnation, the conference evolved and is presently considered as a leading international forum bringing together academicians, scientists, professionals, engineers and industrialists from around the globe specializing in fiber optics and photonics technologies to explore recent technical advances with state-of-the-art reviews in the thrust zones of all the major topics to be covered in the conference and to delineate outstanding photonics science and technology issues towards futuristic research and applications. The conference was graced by legends such as Prof. C. K. Kao, Dr. N. S. Kapani, Prof. C. K. N. Patel, Prof. David Payne, Prof. Phillip St. J. Russell…the list goes on.

Fiber optics along with specialty fibers, has transformed - and continues to transform - handling of information in telecommunication systems to the present day's terabit communication links. In addition, advancements of this technology and the related components have left considerable impact on a totally different area: sensing. The sensing field spans, but is not limited to, civil, mechanical, aeronautical, environmental, biochemical engineering. Today, fiber optics and fiber-based components have emerged to a level where they play key roles in almost all of the emerging and relevant engineering applications.

The science and engineering world has witnessed many milestones and many technological breakthroughs over the past decade, infusing interdisciplinary research advances. For example, the significance of nanoscaling has shown tremendous advancements not only in the area of material science, but also in the optical fiber technology as well as in the photonics technology as a whole. Nanophotonics has a potential to revolutionize the field of telecommunications, computing and sensing. Equally important, surface plasmon polaritons technology has an important and definitive role to play in the advancement of

telecommunication and the sensing technologies. This is because of their ability to confine and guide electromagnetic waves in a subwavelength scale, leading to the inherent possibility of the manipulation of optical signal in ultrafast and miniaturized photonic devices.

Continuing the tradition, PHOTONICS 2010 is intended to serve as an international forum to cover latest technological advances in fiber optics and photonics. Importantly, the conference is intended to identify and discuss outstanding science and technology issues, challenges pertinent to the present the futuristic applications, and to have a foundation of viable solutions to cater to the global need of humankind by interfacing photonics industries and academia.

PHOTONICS 2010 was organized by the Indian Institute of Technology Guwahati (IIT Guwahati), a premier institution located at the capital city of one of the most beautiful states of India in its northeast region. The conference was preceded by one-and-a-half days of short courses on some of the emerging topics in photonics. These short courses are designed to increase the knowledge in the thrust areas of specific research subjects with a very novel and fundamental approach offered by the pioneers, who are incredibly visionary and have led the research to the path-breaking level. PHOTONICS 2010 carried a full range of academic/industrial activities including, tutorials, technical (oral/poster) sessions, industrial exhibitions, and an industrial-academic (techno-commercial) interactive session.

PHOTONICS 2010 was inaugurated with the keynote address by Prof. Phillip St. J. Russell, Director, Max-Planck Institute for the Science of Light in Erlangen, Germany. The conference offered seven plenary presentations given by distinguished speakers and over 90 review presentations on a variety of topics by invited speakers from all over the world. The organizers are proud to announce that PHOTONICS 2010 probably surpassed all the previous records and witnessed the submission of 710 contributory papers from researchers across 41 countries (Afganistan, Australia, Bangladesh, Barbados, Belgium, Brazil, China, Canada, Czech Republic, Denmark, Ethiopia, Finland, France, Germany, Greece, India, Iraq, Iran, Ireland, Israel, Italy, Jamaica, Japan, Malaysia, Mexico, Nigeria, Nambia, Nepal, Netherlands, Philippines, Poland, Portugal, Republic of Korea, Russia, Spain, Singapore, Sweden, Taiwan, Turkey, United Kingdom, and United States). This is the largest in the history of this biennially held conference in terms of number, the global expansion.

To ensure high technical quality in all its presentations, PHOTONICS 2010 adopted a rigorous screening process through an extensive panel of international experts. Based on the expert's report/remarks and the subsequent recommendations of the technical program committee, a total of 456 contributory papers – 119 oral and 337 poster – were accepted for presentation. To encourage high quality and innovative research with a potential scope of commercialization, the following awards have been instituted in PHOTONICS 2010: OSA and SPIE Best Student

Paper, IEEE Photonics Society Student Travel Grant Support, IITD-FOS Photonics, Photonics 04 Endowment, and Sterlite Technology Innovation. Finally, we hope that we created a technically invigorating atmosphere in order to achieve the objectives of the conference. We welcome you to IIT Guwahati and to PHOTONICS 2010 and also wish you a very memorable and enjoyable stay at Guwahati.

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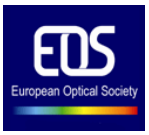

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