

Preface

Optics/Photonics and Opto-electronics are indispensable in almost all spheres of life, ranging from everyday life requirements such as communication and biomedicine to advanced science and technology. Starting from basic classical geometric and physical optics and quantum optics, there has been tremendous technological advancement as a result of which we have areas such as optical communication networks, optical information processing, space optics, electro-optics, Opto-mechatronics, Organic Photonics and so forth. Keeping the present scenario in mind, the First International Conference on Opto-Electronics and Applied Optics, IEM OPTRONIX 2014, was organized by the Department of Electronics and Communication of Institute of Engineering and Management, IEM, at D1, Management Campus, Salt Lake, Sector V, Kolkata 700091 on 16–17th December, 2014 in technical collaboration with Optical Society of India, OSI along with the SPIE Student Chapter at IEM/Kolkata, and was financially supported by Department of Science and Technology, DST, Government of India and Council of Scientific and Industrial Research, CSIR.

The conference was organized to commemorate the International Year of Light, IYL 2015 which was proclaimed by the United Nations and was intended to raise awareness amongst both academic and non-academics. The aim was to raise awareness of students, researchers, faculty members, industry and appropriate government personnel about the recent trends in research and development in the area of Opto-electronics, Photonics, Applied Optics, Bio-medical Optics and other relevant fields.

At this Conference, the following 18 areas were covered:

- Quantum Optics and Information Processing
- Optical and Digital Image Processing
- Opto-electronic Devices
- Optical Design
- Photonics for Space Applications
- Application for Solar Energy
- Fibre Optics and Devices

- Diffraction Tomography
- Opto-electronic Materials
- Non-linear Optics and PCF
- Non-linear Phenomenon and Chaos
- Nano-Photonics, Bio-Photonics and Bio-Medical Optics
- Micro-electronics and VLSI
- E.M. Radiation Theory and Antenna
- Optical Communications and Networks
- Opto-mechatronics
- Organic Photonics
- Terahertz Technologies

Plenary, invited and contribute talks covered all these areas and there was an overwhelming response to our meeting. Among 120 contributed submissions, there were two keynote addresses, 12 plenary talks and 67 accepted research papers.

The Conference started with national anthem “Jana Gana Mana” sung by the distinguished dignitaries and audience followed by inaugural speech delivered by Prof. Dr. Satyajit Chakrabarti, Founder Director, IEM Kolkata and VC, University of Engineering and Management, UEM, Jaipur via Skype from Canada. The welcome speech was delivered by Prof. Satyajit Chakrabarti, Director, IEM, Kolkata followed by Ajoy Kumar Chakraborty, Professor, IEM, Kehar Singh, Former Professor, IIT, Delhi, Bishnu Pal, President, Optical Society of India, and Vasudevan Lakshminarayanan, Professor, University of Waterloo, Canada. Keynote addresses were delivered by Phillip Russell, Director, Max Planck Institute for the Science of Light, Erlangen, Germany on “Enhancing Light-matter Interactions Using Micro-structured Glass Fibres” and Lorenzo Pavesi, Professor, Department of Physics, University of Trento, Italy on “Silicon Photonics”. The Plenary talks were delivered by distinguished scientists; the details of which are available in the Conference website:

http://www.iem.edu.in/iem_optronix/IEM%20OPTRONIX/speakers.html.

The Central Glass and Ceramics Research Institute, CGCRI, a CSIR Research Laboratory at Kolkata and Light Logics, Trivandrum, Kerala, India exhibited different products and highlighted project opportunities existing at their institutions. We express our heartfelt gratitude for their contribution.

We are extremely thankful to the International Advisory Committee and the Technical Program Committee for their valuable guidance and extended support in this regard. A list of the committee members is appended to this Preface. We express our sincere gratitude to the Student Organizing Committee which has consistently supported and taken part in the different activities as and when required. We express our heartfelt gratitude to the staff and faculty members of IEM, Salt Lake, Kolkata for making the Conference a success.

Waterloo
Kolkata

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