2012 Annual Report

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1. Financial information

<table>
<thead>
<tr>
<th>Date</th>
<th>Item</th>
<th>Deposit</th>
<th>Expense</th>
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2. 2013 Chapter Activities

2012 SPIE Photonics West Conference (January 21st to 26th 2012)

SPIE Photonics West 2012 once again drew record attendance from around the globe, and the SPIE Toronto Student Chapter contributed 12 presentations:


M. Haque, J.R. Grenier, S. Ho, L.A. Fernandes, and P.R. Herman “Femtosecond Direct Writing of Lab-on-a-fiber Optofluidic Sensors,” SPIE Photonics West Conference 2012 [Best Student Paper Award - 1st Place].


J.C. Ng, P.R. Herman, and L. Qian, “Electro-optic effect in femtosecond laser written MZIs via microchannel electrodes,” SPIE Photonics West Conference 2012.


**Award Winning Presentations:**

Congratulations to Moez Haque and Jason Grenier who's presentations received first and third place, respectively, in the student paper competition in the Commercial and Biomedical Applications of Ultrafast Lasers session.

**Chapter Advisor Interviewed at Photonics West:**

Prof. Peter Herman (Chapter Advisor) discusses his thoughts about Photonics West conference and the benefits and opportunities that exist for researchers and students. He also mentions our chapter during the interview: [https://www.youtube.com/watch?feature=player_detailpage&v=KzotHDN0qVs#t=176](https://www.youtube.com/watch?feature=player_detailpage&v=KzotHDN0qVs#t=176)
SPIE Chapter Executives Jason and Luis pose for a picture outside of the main entrance to the Moscone Centre.

**Dr. Michael Withford Public Lecture (August 10th, 2012)**

Dr. Withford is a Professor in the department of Physics and Astronomy and the Director of the MQ Photonics Research Centre at Macquarie University in Australia. The lecture entitled: “the long road that is short” discussed how their early work on nanosecond laser ablation mechanisms and micromaching influenced the direction of their current work in the femtosecond laser inscription. He also reviewed how their current work influences and contributes to other projects in astro-and quantum-photonics. The lecture was attended by 18 people.

**Dr. Euclides Almeida Public Lecture (Oct. 5 2012)**

On Oct. 5th, the SPIE and OSA student chapters co-hosted a public lecture given by Dr. Euclides Almeida from the Federal University of Pernambuco, Brazil. The lecture entitled: “Nonlinear optical characterization of ultrafast phenomena in nanoscale systems,” explored the non-linear optical properties of nano-structured materials, particularly plasmon and exciton dephasing, charge transfer and transport. The lecture was attended by approximately 14 people.

3. **Details of planned activities for the future**

During the past year several chapter members attended the Photonics West conference and presented the latest development in their research but also expanded their professional network at the many student activities. It appears that the chapter members will well represented at the 2013 with at least six oral presentations. We also look forward to teaming up with the local OSA student chapter to co-organize events especially the Laser Tag event which is quite popular with our members. We also anticipate to help sponsor and co-organize the annual Photonics BBQ social for new students in September, which is a perfect opportunity to introduce the SPIE student chapter.
“The long road that is short”

Dr. Michael Withford
Professor
Macquarie University
Dept of Physics and Astronomy

Abstract
Our femtosecond laser direct write photonics program is a legacy of earlier studies investigating nanosecond laser ablation mechanisms and applied micro-machining, studies that started at Macquarie University in the mid 90s. In this talk I will review how that early work defined our choices, approach and planning during our 1st forays into ultrafast laser inscription. Insights into the culture within the MQ Photonics Research Centre and how it influences and contributes to our current projects in astro- and quantum-photonics will also be reviewed. Finally, our recent struggles and successes in these new projects will be highlighted.

Biography
Prof. Withford was awarded a PhD from Macquarie University in 1995 for his investigations developing high power metal vapour lasers. His current research activities range from laser device development, laser applications, microphotonics, astrophotonics and quantum photonics. Dr. Withford is currently the Director for the MQ Photonics Research Centre, which includes >30 research staff and >30 postgraduate students. He also leads both the Macquarie University node of Australian Research Council (ARC) Centre of Excellence: Ultrahigh-bandwidth Devices for Optical Systems (CUDOS) and the OptoFab Node of the Australian National Fabrication Facility. He has over 200 publications (including >90 refereed journal papers) and several patents in the field of photonics.