



# **SPIE.** **STUDENT CHAPTER** ASTON UNIVERSITY

## **Annual Report**

October 2014 – November 2015

## Chapter overview

The Aston University SPIE Student Chapter was established on the 17th of August 2012. The chapter consists mostly of PhD students at Aston Institute of Photonic Technologies (AIPT), Aston University Birmingham, United Kingdom. The main objective of forming the student chapter is to create a platform for students to interact and work together on various activities as it helps to build team work, communication and leadership skills in them. Since its inception, the chapter has been involved in many activities such as fresher's fair, welcome meeting, photonics laboratory tour, AIPT student conference, education outreach training and so on.

## Aston University SPIE Chapter members

The chapter officials were mainly appointed based on the interest shown by students who signed up to be members, and some were elected by the members. The current members of the chapter are:

Name	Position	Email
Prof. David Webb	Chapter advisor	d.j.webb@aston.ac.uk
Changle Wang	President	wangc15@aston.ac.uk
Abdulyezir Badmos	Vice-President	badmosaa@aston.ac.uk
Amit Yadav	Secretary	yadava@aston.ac.uk
Modestas Zulonon	Treasurer	
Mohammed Mubarak Mohammed AlAraini	Member	alarammm@aston.ac.uk
Mohammad Al-Khateeb	Member	alkhamaz@aston.ac.uk
Abdulyezir Badmos	Member	badmosaa@aston.ac.uk
Adenowo Gbadebo	Member	gbadebaa@aston.ac.uk
Md Asif Iqbal	Member	iqbalm7@aston.ac.uk
morteza kamalian kopae	Member	kamaliyam@aston.ac.uk
Huseyin Karakuzu	Member	karakuzh@aston.ac.uk
Son Le	Member	let1@aston.ac.uk
Andreas Pospori	Member	a.posporis@aston.ac.uk
Hannah Robbins	Member	
Changle Wang	Member	wangc15@aston.ac.uk
Amit Yadav	Member	yadava@aston.ac.uk
Michal Zubel	Member	zubelmg@aston.ac.uk
Modestas Zulonon	Member	zulonasm@aston.ac.uk
Rajib Ahmed	Member	RXA448@student.bham.ac.uk

## Aston University SPIE activities Year 2014-2015

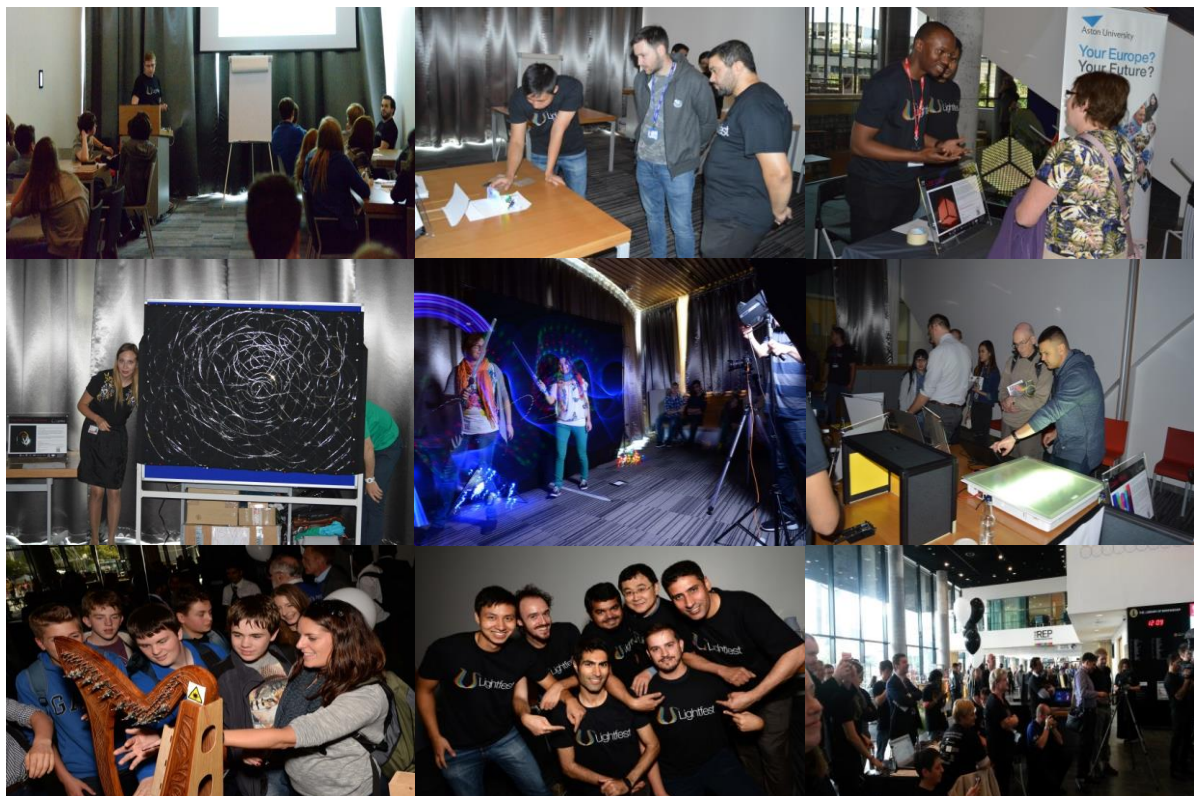
The Aston University chapter organized two events this year.

1. Lightfest (every chapter member got involved and contributed)
2. Aston Year of Light Workshop (our chapter were the main organizers and participants)
3. Interactivities with other SPIE student chapters (mainly with Imperial College, Kent University, Southampton University and University of Bristol *et.al.*)
4. Seminars by different visiting researchers (our chapter have served as different roles in them, e.g. an inviter, organizer, or just attendees)

### 1. Lightfest

On 25 September 2015, our institute AIPT, together with the Library of Birmingham, hosted the Lightfest science festival - an interactive science exhibition exploring the science of light - in Birmingham (UK) to celebrate Aston University's forthcoming 50th anniversary and the International Year of Light and Light-based Technologies 2015 (IYL 2015). The event was hosted at the Library of Birmingham, Europe's largest public library. The Researcher Night Initiative is designed to bring scientists and researchers closer to the general public.

This science festival showcased how photonics impacts our everyday life and demonstrated what researchers do in their laboratories. As one of the biggest event by our institute, over 12,000 attendees visited the Lightfest. And our SPIE student chapter had always been very active in it. 5 members had been the lead developer in 10 activities, 12 members had been demonstrators in 10 activities and every member had participated and contributed to it.



### *Some pictures at the Lightfest*

Some of the activities we had gotten involved in and our roles are as following table show.

<b>Activities</b>	<b>Lead Developer</b>	<b>Demonstrator</b>
Light and gummy bears	Andreas Pospori, Michal Zubel	Md Asif Iqbal
Why are optical fibres so useful? (Part 1 - Light Refraction, Optics, TIR; Part 2 - Refractive Index; disappearing objects; Part 3 - TIR, lightguiding)	Andreas Pospori, Michal Zubel	
Mix your own colours	Andreas Pospori, Michal Zubel	Son Le, Atalla El-Taher
Laser Microscope	Andreas Pospori, Michal Zubel	Morteza Kamalian
M-squared Multicolour panel	Modestas Zilonas	Vladimir Kalashnikov
Colour mixing		Mohammad Al-Khateeb
Phosphor light converters	Amit Yadav	Badmos A. A.
How can a Lego robot recognise colours?		Adenowo Gbadebo, Srikanth Sugavanam
How thick is your hair?	Andreas Pospori, Michal Zubel	
Diffractive optics	Andreas Pospori, Michal Zubel	Huseyin Karakuzu
Laser Harp		Changle Wang
Interactive LED Wall	Blessy Rwabukera	
Virtual pottery wheel	Blessy Rwabukera	
LED Cube		Mohammed AlAraini

## **2. Aston Year of Light Workshop**

The year 2015 has been declared as the International year of Light by the UN. On this occasion, our institute AIPT held the Aston Year of Light Workshop on 6<sup>th</sup> and 7<sup>th</sup> October 2015. The workshop comprised of talks given by eminent academics in the field of photonics, and also provided attendees the opportunity to present their own work in the poster session.

The SPIE student chapter has worked as the organizer and participant in this workshop, especially our chapter member Srikanth Sugavanam, Adenowo Gbadebo, Modestas Zilonas, Amit Yadav, Mohammad Al-Khateeb, Changle Wang and so on. We had started to preparing for this event ever since May 2015. All the advertisement was spread out in July and many SPIE student chapters in UK and Europe had received our notifications. Postgraduate / Ph.d students and post-doctoral researchers around Europe had been invited to the Aston Year of Light workshop.

The following were the particulars of the program:

<b>Time</b>	<b>Speaker</b>	<b>Topic</b>
<b>6th October 2015</b>		
08:30 - 09:30	Registration & Reception	
09:30 - 10:00	<b>Prof. DAVID WEBB</b> AIPT, Aston University	Introduction to Research activities at AIPT and Aston University
10:00 - 11:00	<b>Prof. MANIJEH RASEGHI</b> Northwestern University, USA	Developing better light sources with band structure engineering
11:00 - 11:30	Coffee Break	
11:30 - 12:30	<b>Prof. BORIS CHICHKOV</b> Laser Zentrum, Hannover, Germany	3D Nanoengineering and Laser printing
12:30 - 14:00	Lunch Break (time to prepare posters)	
14:00 - 15:00	<b>Prof. RICHARD PENTY</b> University of Cambridge, UK	Low Energy Photonic Switches for Reducing the Carbon Footprint of Data Centres
15:00 - 16:00	<b>Prof. ALEXANDER SZAMEIT</b> Institute of Applied Physics, Friedrich Schiller University, Jena	Topological photonics
16:00 - 17:00	<b>Prof. IAN WALMSLEY</b> University of Oxford, UK	Building large quantum states out of light
17:00 - 19:00	Poster session/mixer session/discussions with Professors + buffet dinner	
<b>7th October 2015</b>		
9:00 - 9:30	Coffee Break	
9:30 - 10:30	<b>Prof. YURI KIVSHAR</b> Australian National University, Canberra	Recent advances in optical metamaterials
10:30 - 11:30	<b>Prof. PAUL FRENCH</b> Imperial College London, UK	Fluorescence lifetime imaging for high content analysis - from automated microscopy to tomography and endoscopy
11:30 - 12:00	Coffee Break	
12:00 - 13:00	<b>Mr. ANDREW LOWE</b> Hexagon Metrology, UK	Light at the heart of measurement
13:00 - 14:30	Lunch Session and Group photo	
14:30 - 15:30	<b>Prof. Sir DAVID PAYNE</b> Optoelectronics Research Centre, Southampton, UK	Lighting up the world
15:30 - 16:00	Best student poster award.	



Some pictures at the Aston Year of Light Workshop

### 3. Interactivities with other SPIE student chapters

Some of our chapter members attended two activities held in Imperial College and University of Bristol respectively. One was “The Future’s Bright – Lighting up Photonics in the UK” held by the Institute of Physics and Imperial College London, and the other by the History of Physics Group and the School of Physics, University of Bristol.

The Aston University SPIE student chapter had invited all SPIE student chapters at UK to attend our Aston Year of Light Workshop at October 2015. And every chapter could have one opportunity for registration fee reimbursement for the chapter officials, i.e. £ 50.00. Three chapters from Imperial College, Kent University and Southampton University attended. A small meeting on the future interactivities between chapters was held and all the attendees from other universities had an AIPT lab tour finally.

### 4. Seminars

Many seminars were held by our institute (AIPT) during the past year, especially this term. However, very few of them were organized by our chapter and we were attendees for most time. In the past term, we had been active organizers at the seminar *Wearable technology - next frontier in connectivity solutions* by Dr Ekaterina Golovchenko from TE Connectivity Ltd in 7 May 2015.

## **Financial breakdown**

No funds were availed during this session by the chapter.

## **Conclusion**

Ever since the new chapter officer election in this April, our chapter had attracted more students to join us, growing from 5 to 15 members now. Some internal activities have been held, such as playing pool, going for bars or birthday celebrating and so on. Every member was familiar with each other. During the second half year, our chapter have been involved in and organized two big events, Lightfest and Aston Year of Light Workshop. Both event have been prepared for many months. Moreover, every member of our chapter has contributed in them and also a little exhausted in the following time. The new chapter officers have been more and more familiar with their work now.

In the other side, our chapter did not apply and use chapter grant from SPIE. It was a pity for us. A more detailed future chapter plan should be made and chapter grant should also be in our application. Though many seminars happened at AIPT, we only organized a few of them. Meanwhile there was really a small audience for some seminars. In the future, our chapter can play a more active role in seminar organization due to knowing the PhD students better. In 2015 no officers of our chapter apply for the travel grant. In the future, we should make good use of them, not only the grant but also the communicating with other chapters in the world. After the transition this term, we believe we can do more and better in the following year.

We sincerely thank the SPIE student services for their support in all the activities and opportunities.