Australian National University

SPIE student Chapter Annual Report February 2015

Section 1

SPIE Student Chapter Officers 2015			
Position	**Name**	**Email Address**	**Member Numbers**
President	Sergey Kruk	sergey.kruk@anu.edu.au	3518929
Vice President	Katie Chong	katie.chong@anu.edu.au	3590805
Treasurer	Ben Hopkins	ben.hopkins@anu.edu.au	3590799
Secretary	Heyang Li	lhy110@physics.anu.edu.au	3600789

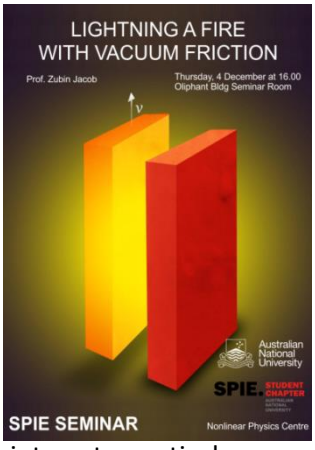
Section 2

Current Members (16)			
1	Mohammad Ali	9	Daniel Leykam
2	Diana Antonosyan	10	Heyang Li
3	Haitao Chen	11	Leo Li
4	Katie Chong	12	Mingkai Liu
5	Michael Cole	13	Ali Mirzaei
6	Ben Hopkins	14	Mahsa Paziresh
7	Hemendra Kala	15	Sergey Suchkov
8	Sergey Kruk	16	James Titchener

Section 3

Our chapter was established on 7 February 2014 but our officers were not elected until later in the year. Once the officer committee had been form, a few activities, including professional development, outreach and social event have been planned and held.

5th December 2014 – Professional development



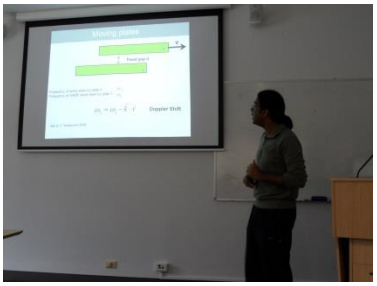
We hosted a student seminar "Lighting a fire with vacuum friction" by Prof Zubin Jacob from the University of Alberta, Canada under the visiting lecturer programme as described in our funding request form. The lecture was advertised around our Research School targeting at research students. It was well attended with approximately 40 attendees, including PhD students and research staff. The lecture was followed by a casual networking session with wine and cheese provided (as well as soft-drinks for the non-alcoholics).

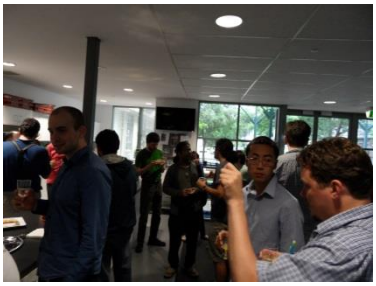
Seminar Abstract:

One of the surprises of quantum mechanics is zero point fluctuations which pervade both vacuum and matter. Far from just theoretical interest, practical consequences exist at the nanoscale when these fluctuations cause forces that attract or repel macroscopic bodies. However these forces are often small and difficult to enhance. We have recently pointed out a giant fluctuational force between moving bodies caused by a singular Fabry-Perot mode. This talk will introduce the basic phenomenon of vacuum friction and the giant enhancement due to a singular Fabry-Perot resonance in moving media.

Speaker Biography:

Zubin Jacob is currently an Associate Professor of ECE at the University of Alberta, Canada. He completed his Ph.D from Purdue University (2010) where he received the Dmitri N. Chorafas best dissertation prize awarded only to around 20 students annually worldwide. He has received many awards for his research, including the SPIE Graduate Fellowship Award for potential long range contributions to optics and optical engineering (2008) and the IEEE Photonics Society Fellowship (2010). He acts as a reviewer for many high-impact journals and serves on the Editorial Board of Scientific Reports (a journal by the Nature Publishing Group) and Journal of Optics (published by the Institute of Physics).



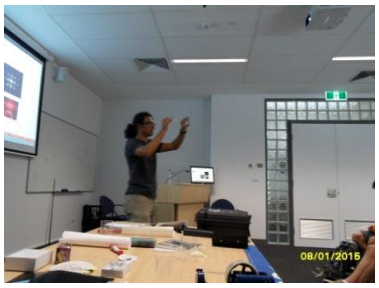


Grant spending:

Catering cost – a total of AUD $127.94

8th January 2014 - Outreach

Using the optical tool kit provided by SPIE, we gave interactive seminars on some interesting optical phenomena and demonstrated those effects with senior high school students from the National Youth Science Forum. Each seminar was 45 minutes long, during which 3 of our chapter members each spent 15 minutes to give a talk in topics in optics, covering polarization, liquid crystals and diffraction. Demonstrations were done during talks where the high school students could play with the tool kits. The students were then taken to our optics research lab to see how the simple concepts introduced in the talks can be applied to real life research. A total of about 40 (2 groups of 20) students attended our two sessions. For encouragement, we also gave away the small demonstration packs to students who actively answered questions and participated in the interactive demonstrations.



Nation Youth Science Forum Bio

The NYSF helps students moving into Year 12, who wish to follow careers in science, engineering and technology by introducing them to research and researchers, by encouraging the achievement of excellence in all their undertakings, and by helping to develop their communication and interpersonal skills. It also fosters discussion of, and interest in major national and global issues and emphasises the importance of maintaining continuing active interests in sport, arts and music.

The NYSF's mission is to provide community minded and science focused young Australians an opportunity for network development and insight into skills, careers and a lifetime of achievement in science, engineering and technology.

The flagship event of the NYSF is the January Forum. Until recently this event had been held exclusively in Canberra and hosted by The Australian National University.

Grant spending:

No money was spent for this event.

12th February 2014 – Recruitment Event

To keep our chapter members in touch with each other and have regular face-to-face contact, this year we have started a "cake afternoon" series. Our first cake afternoon also acted as a recruitment event. This differs from our original description in the funding request form as the social event we were going to sponsor in order to promote our chapter did not happen. The cake afternoon was advertised to the postgraduate students in the whole Research School of Physics and Engineering here at the ANU through email notices, posters and our facebook page. It was well attended with about 30 attendees and all cakes were gone in half an hour time. We have also secured a few new members through this event and a potential officer.

Grant spending:

Cakes and drinks cost – AUD $79.05

Section 4

Future activities

We will continue with our cake afternoon series (in a smaller scale) every fortnight to provide a platform for student members to network and to attract new members.

We also plan to have an outing/social event where our chapter will subsidize the cost for the current members. At this stage the exact social event is not decided, but it will be in the line of bubble soccer, paint ball game or some other outdoor activities. This will be held in April before it starts to get cold.

In May, we will sponsor a student talk competition where 3rd year undergraduate physics student studying optics will research on an optics related topic and present it in a 15 minute talk. The talks will be judged by PhD students researching in optics related area and our student chapter will sponsor the prize for the winner of the competition.

We plan to invite another visiting lecturer to give a seminar towards the end of the year – details to be decided.

Section 5

Financial information

Beginning balance = $0

Items	Credit (AUD)	Debit (AUD)
SPIE funding	+558.97	
Travelling lecturer seminar catering		-127.94
Recruitment - First cake afternoon		-79.05
Ending Balance (AUD) (as of 24 Feb 2015)	+351.98	