

# Report of Activities of SPIE The Penn State Univ. Chapter (September 2012 through August 2013)

Shuo Zhao, *Chapter President*

## Name of Chapter

SPIE The Pennsylvania State University Chapter  
<http://spie.ee.psu.edu/>

## Chapter Leadership

Name	Position	Email Address
Shuo Zhao	President	sxz154@psu.edu
Yanhui Zhao	Vice-President	yzz127@psu.edu
Corey Janisch	Secretary	ctj119@psu.edu
Ding Ma	Treasurer	dim5211@psu.edu
Jimmy Yao	Webmaster	jty112@psu.edu
Dr. Zhiwen Liu	Chapter Faculty Advisor	zliu@enr.psu.edu

**Member Count:** 20 members (as of 9/15/2013)

## Abbreviated SPIE-PSU Expense/Income Report

Description	Date	Amount
O+P 2013 Trip Total expenses	August 2013	\$3,300
From SPIE Officer Travel Grant	August 2013	\$1,100
Subsidy from University	August 2013	\$2,250
Current chapter balance	September 2013	\$1188
Outreach account	September 2013	\$70

## **Chapter activities from September 1<sup>st</sup> 2012 – August 31<sup>st</sup> 2013**

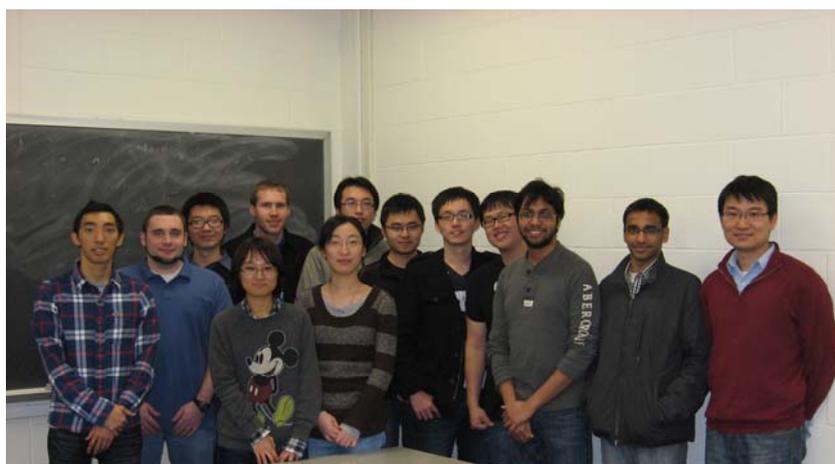
The events are listed here in chronological order. Officer only meetings are not listed.

### **Sep. 4<sup>th</sup> 2012: Chapter kick-off meeting**

During the New Year's (2012-2013) first meeting, we welcomed new members to the chapter. Fellow members shared their experiences of the summer trip to SPIE O+P conference in San Diego, CA.

### **Dec. 5<sup>th</sup> 2012: Summary meeting for the semester**

At the end-of-school week, members gathered together to set preliminary plans for the coming semester, including visiting lectures and outreach opportunities.



### **Mar. 19<sup>th</sup> 2013: Exhibition at the Exploration U - A STEM Event for the Community**

Ten of our members attended the Exploration U exhibition held by the university, aiming at providing STEM activities for the community, as well as enhancing the chapter's visibility to the public. During the event, posters and experimental demos are presented, and several hands-on activity kits are distributed to kids and their parents.



### **Apr. 18<sup>th</sup> 2013: Visiting lecture - Dr. David Aspnes from NCSU**

With the help of Dr.Liu, we were able to invite Dr. David Aspnes from NCSU for a visit. During his visit, profound discussions were carried out between Dr.Aspnes and our members, in aspects of academia and career planning. A lecture was also given to students from various departments in the field of linear and nonlinear optics, more specifically on 'bond model', which is of Dr.Aspnes major research interest.



### **Apr. 23<sup>rd</sup> 2013: Connection built with Penn State Electro-Optical Center**

After several attempts, our chapter was finally able to contact to Penn State EOC, and major members had discussed with its chief coordinator about possible activities. It became very promising that we would build more connections with optic companies and other student chapters within the Pennsylvania region.

### **May 21<sup>st</sup> 2013: Summer activity planning meeting**

During this meeting, reflections on the previous meeting with EOC coordinator was discussed among members and more ideas about future activities were brought about. Preliminary social event plans during the summer was also proposed.

### **Jun. 20<sup>th</sup> 2013: Presentation at Millennium Mash-up Seminar**

As an invited student organization, our chapter presented at the Mash-up Seminar to provide this year's REU students some information of our chapters. We utilized this opportunity to communicate with undergraduate students, as well as other professional societies in the university.



## Aug. 23<sup>rd</sup>~29<sup>th</sup> 2013: SPIE O+P Conference

Three of the members Nikhil Mehta, Ding Ma, and Shuo Zhao, have attended the SPIE O+P Conference at San Diego, CA, with the generous aids from SPIE and the University. Through leadership workshops, oral presentations, and various social activities, they have broadened their horizons, ignited their creativities, and extended their networks. Provided is a list of works presented at the conference developed by students, post-doctorate scholars, and faculty member affiliated with SPIE Penn State chapter.

[Proceeding paper number] authors, title

- [8467-10] Joan M. Redwing, "Comparison of radial junction fabrication methods for Si micro/nanowires array solar cells"
- [8818-15] Stephen E. Swiontek, Akhlesh Lakhtakia, et.al, "Surface-plasmonic-polaritonic sensor using a dielectric columnar thin film"
- [8820-17] Joan M. Redwing, Sarah M. Eichfeld, et.al, "Growth and intentional doping of Si nanowires using Si-Cl-H growth chemistry (*Invited Paper*)"
- [8823-5] Muhammad Faryad, Liu Liu, Theresa S. M, et.al, "Optical and electrical modeling of amorphous-silicon tandem solar cell with nonhomogeneous intrinsic layers"
- [8828-27] Shuo Zhao, Kuan Lun Hong, et al, "Microseconds-nanoseconds-femtoseconds all-optical switching with liquid crystals"
- [8828-43] Iam Choon Khoo, Kuan Lun Hong, Shuo Zhao, "Nonlinear optics with blue-phase liquid crystals"
- [8829-11] Noel C. Giebink, "Plasmonic photoinjection spectroscopy: unraveling charge carrier injection and transport directly in organic light emitting diodes (*Invited Paper*)"
- [8833-9] Stephen E. Swiontek, Drew P. Pulsifer, et.al, "Surface multiplasmonics for optical sensing (*Invited Paper*)"
- [8834-7] Noel C. Giebink, "Investigation The intersection of photonics and nonimaging optics in luminescent solar concentration (*Invited Paper*)"
- [8845-8] Venkatraman Gopalan, et.al, "Probing ferroelectrics using optical second harmonic generation microscopy (*Invited Paper*)"
- [8845-19] Nikhil Mehta, et.al, "CMOS: compressive multi-heterodyne optical spectroscopy"
- [8845-34] Chuan Yang, et.al, "Parallel axial imaging in scanning microscopy"
- [8845-38] Perry S. Edwards, Corey Janisch, et.al, "Raman spectroscopic sensing using whispering gallery microresonators"
- [8847-21] Yun-Ching Chang, Shizhuo Yin, et.al, "Broadband large field of view electro-optic modulators using potassium tantalate niobate (KTN) crystals"
- [8847-29] Shizhuo Yin, et.al, "Fabrication of nanostructures on curved surfaces"

## Future Directions:

The SPIE student chapter is working hard to create a beneficial experience for its student members. Emphasis in the next year would be increasing the influence of SPIE on campus, which has already shown strong signs of promise. Moreover, a long-term development blueprint is being formed right now, thus it is expected that more activities will be conducted which can make us a better group.