Report of Activities of SPIE The Penn State Univ. Chapter
(September 2013 through August 2014)

Ding Ma, Chapter President

Name of Chapter
SPIE The Pennsylvania State University Chapter
http://spie.ee.psu.edu/

Chapter Leadership

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Member Count: 25 members (as of 8/30/2014)

Abbreviated SPIE-PSU Expense/Income Report

<table>
<thead>
<tr>
<th>Description</th>
<th>Date</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Current chapter balance</td>
<td>September 2014</td>
<td>$1600</td>
</tr>
<tr>
<td>O+P 2014 Trip Total expenses</td>
<td>August 2014</td>
<td>$(3400)</td>
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<tr>
<td>From SPIE Officer Travel Grant</td>
<td>August 2014</td>
<td>$1100</td>
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<tr>
<td>Subsidy from University</td>
<td>August 2014</td>
<td>$2100</td>
</tr>
<tr>
<td>10th anniversary grant</td>
<td>December 2013</td>
<td>$200</td>
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Expenses of printing poster for exhibitions or advertising, treat for regular SPIE member and preparatory meetings, and team building activities are not listed above.
Chapter activities from September 1st 2013 – August 31st 2014
The events are listed here in chronological order. Regular meetings and Officer only meetings are not listed.

Oct. 17th, 2013: Invited Talk: Laser Ablation Tomography (LAT)
Mr. Benjamin Hall, the President of Lasers for Innovative Solution, LLC, introduced LAT technique, which is developed by Penn State. The talk attracted more than 30 students in various field. After the lecture, Mr. Hall and our members discussed about related techniques, potential applications and how to operate a start-up company.

Nov. 6th, 2013: Bowling Night
To enrich members’ life outside labs and classrooms, we held a bowling party accompanied by pizza meal. Members are grouped to four teams to play a bowling championship. This is only one of our abundant team building activities we will launch in following years.

Feb. 22nd, 2014: Penn State Student Chapter 10th anniversary
To celebrate our student chapter’s 10th birthday, we played the snow tubing in Tussey Mountain, PA, under the generous grant gift from SPIE!
**Mar. 21st, 2014: STEM Education & Outreach Events**
This year we deliberately prepared several new optical demos facing middle school children. Our outreach aims to employ an approach that provides young students opportunities to reproduce optical phenomenon in the lab. The specifically designed demos were drawing well.

**Apr. 2nd, 2014: Visiting lecture - Dr. Janos Vörös from ETH Zurich**
Dr. Janos Vörös, Professor of Bioelectronics in ETH Zurich, gave an instructive lecture on nanotechnology based tools for biosensing and neuroscience at the invitation of SPIE PSU-Chapter. This comprehensive talk introduced the emerging field exploiting neuroinformation with nano-approach. Dr. Vörös also shared his experience on how to finish PHD productively with student members. Nearly 15 members attended this event, and the promotion attract another tens student working in this field.

**Apr. 25th, 2014: SPIE 2014 officer election**
This year we added four more positions to manage annually outreach in local community, build network between growing chapter volume, and promote SPIE PSU-chapter. New officers represent theirs philosophies about how to operate a successful student organization afterward. Former president also briefed attendees on previous year’s summary.
**July 23rd, 2014: Brimrose industrial tour**
After several rounds of contacts, we visited Brimrose Corporation of America this summer. The purpose of industrial tour is enhancing company visibility to our members. Brimrose showed us their recently developed spectral analysis products, and then our members talked with the engineers in aspect of research and career. We hope our members can learn about industry expectations and corporate cultures from this industry tour and other upcoming events.

![Brimrose Group Photo](image1.jpg)

**Aug. 23rd~28th, 2014: SPIE Optics + Photonics, San Diego, CA**
Six student members Shuo Zhao, Nikhil Mehta, Corey Janisch, Liu Liu, Chenji Zhang, Yizhu Chen, and Chapter advisor Dr. Zhiwen Liu, have attended the SPIE O+P Conference at San Diego, CA, with the generous aids from SPIE and the University. They share their research results with other researchers, network with their peers, and come up with new ideas that will continue developing the field.

![SPIE Conference Photo](image2.jpg)
The following is a list of proceeding papers and poster developed by students, post-doctorate scholars, and faculty members affiliated with SPIE PSU chapter.

[Proceeding paper number] authors, title

[9172-16] Akhlesh Lakhtakia, ‘Shift happens’
[9174-16] Joan M. Redwing, et.al, ‘Van der Waals epitaxy of Bi2Se3 via hybrid physical-chemical vapor deposition for topological insulator applications’ (Invited Paper)
[9182-12] Iam-Choon Khoo, et.al, ‘Liquid crystal hyperbolic metamaterial for wide-angle negativepositive refraction and reflection’ (Invited Paper)
[9182-29] Shuo Zhao, et.al, ‘Ultrafast all-optical switching with transparent liquid crystals’
[9182-31] Iam-Choon Khoo, et.al, ‘Liquid crystal claddings for passive temperature stabilization of silicon photonics’
[9183-38] Noel C. Giebink, ‘Orbital angular momentum in organic microlasers’ (Invited Paper)
[9191-03] Liu Liu, et.al, ‘Excitation of multiple surface-plasmon-polariton waves guided by the interface of a photonic crystal and a two-dimensional gold grating’
[9198-09] Venkatraman Gopalan, ‘Probing metastable ferroelectric states exhibiting large property enhancements’ (Invited Paper)
[9198-12] Chenji Zhang, et.al, ‘G-Fresnel spectrometer design and application’
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 strengthening our connection with industry to develop communications skills by networking with company representatives and gain knowledge that helps us make better decisions about careers.