SPIE. **STUDENT CHAPTER**
UNIVERSITY OF UTAH

**Chapter Annual Report (Nov., 2016- Nov., 2017)**

Prepared by:

Mehdi Hasan

President, 2016-2017 term, SPIE student chapter, University of Utah

**Personnel**

Chapter Adviser:

Berardi Sensale Rodriguez (email: berardi.sensale@utah.edu)

Electrical and Computer Engineering department

Current Officers:

President: Mehdi Hasan (email: m.hasan@utah.edu)

Secretary: Devon Jensen (email: devon.jensen@utah.edu)

Treasurer: Xinbo Wang (email: xinbo.wang@utah.edu)

Vice President: Sourangshu Banerji (email: sourangsu.banerji@utah.edu)

**Current Chapter members:**

| | |
|---|---|
| Sourangsu Banerji | 22 September 2018 |
| Mehdi Hasan | 7 August 2018 |
| Devon Jensen | 17 June 2018 |
| Jieying Mao | 18 July 2018 |
| Divya Pande | 23 May 2018 |
| Athena Shahrabi Farahani | 24 May 2018 |
| Binh Truong | 12 March 2018 |

**Chapter members will be more than 10 in a couple of months as some people need to renew their memberships**

**Outcome and Achievement of the 1ˢᵗ term**

We started the chapter for the first time in our campus in October 2016.  We held an election for a committee of 4 members to run the chapter successfully on December 2016. We also maintained at least 10 members over the whole term of 2016-2017.

Successfully organized the solar eclipse event with notification to most graduate students in the ECE, ME, MSE and Physics department through a Facebook event. 24 members in our Facebook event page is being achieved as well. We also opened a website for our chapter.

Successfully organized SPIE Visiting lecturer event with Prof. Joseph Herzog being the invited speaker from the University of Arkansas.

In next year's activity schedule, we are planning to use the Outreach kit while visiting some local high schools to teach the students about some cool optical phenomena to generate excitement for STEM research and careers.

**Activity 1: Application for SPIE chapter:**

Application for chapter initiation was submitted on September 2016 for the first time from the University of Utah campus with 12 student members and with Berardi Sensale Rodriguez as chapter adviser.

Image of the application first page with signatures collected from 12 registered members at the time of the application:

**SPIE**

## Petition to Form an SPIE Student Chapter

We, the undersigned SPIE Student Members, do hereby petition the SPIE Board of Directors for permission to establish a new Student Chapter.

Student Chapter Name: The University of Utah SPIE Student Chapter    Date: 9/26/2016

| | Printed Name | Signature | SPIE Membership # |
|---|---|---|---|
| 1 | Mehdi Hasan | J.M.Mehdi Hasen | 3742656 |
| 2 | Ashish Chanana | A.C | 4014723 |
| 3 | Prashanth Gopalan | G.M.H | 4014699 |
| 4 | Sara Arezoomandan | SaraArezoomandal | 3576419 |
| 5 | Xinbo Wang | Xinbo Wang | 4014683 |
| 6 | Sourangsu Banerji | SourangSuBanj | 4014709 |
| 7 | Shahshank Pandey | | |
| 8 | Kishan Supreet Alguri | A | 3709185 |
| 9 | Tiancheng Xue | Tian Xu | 3707356 |
| 10 | Athena Shahrabi Farahani | Athena Shahrabi Farahani | 4015145 |
| 11 | Hugo Condori Quispe | H6g | 3750546 |
| 12 | Robert Rantz | | |
| 13 | Devon Jensen | | |
| 14 | Precious Cantu | | |
| 15 | Barun Gupta | BH | 3627492 |
| 16 | | | |

**SPIE. STUDENT CHAPTER**
UNIVERSITY OF UTAH

**Activity 2: Annual Election and Online activity**

Annual election was held for the first committee. There were 4 positions for which votes were casted. The person with the majority votes was selected as the president. All the votes were submitted to the Chapter adviser by email. Total members at that time was 12.

We also opened a Facebook page for activity and event updates. Also recently, we opened a website for the chapter. Here are the links:

Facebook: https://www.facebook.com/groups/175157326343799/

Website: https://sites.google.com/view/uou-spie-student-chapter/home

We have currently 24 members in our Facebook page.

Image of the home page of our chapter website:



# SPIE Student Chapter
## University of Utah

### Welcome!

This is University of Utah's student chapter of the International Society of Optics and Photonics (SPIE).

This Chapter is one of the many SPIE student societies in the world. It is run by elected graduate students (officers) who organize meetings and activities to promote optics to the community. It is also a platform to promote awareness of optical science and optical engineering among academic and local communities. It serves as a means of communication and interaction between students, faculty, and administration.

SPIE Constitution of University of Utah

**Activity 3: Solar Eclipse and sports event**

The event was a successful one with the participation of 9 people. A Facebook event page was created and students were notified within different research groups in ECE, ME, MSE and Physics. About 15 people showed interest in the event but we ended up with 9 people going.

Some pictures of the event:



People enjoying the sun:

People enjoying Cricket while waiting for the Eclipse to begin:

People enjoying Frisbee while waiting for the Eclipse to begin:



Observing Pinhole Phenomena:

**Activity 4: SPIE Visiting Lecturer Event**

SPIE visiting scholar event was organized in our chapter on 26th of September, with Professor Joseph Herzog as the speaker.

The event was a successful one with about 20 people attended the lecture. In the future we want to include more people. To do that, we need to advertise more rigorously and should mention that food/refreshments will be provided as food always attracts people. ;)

Here is the filer that we posted throughout the campus on various notice boards and had sent out to at least 5 different departments via email:

**SPIE Visiting Lecturer**

**Tuesday, September 26th, 2017**
**3:30 - 4:30 PM**
**WEB 2250**
Organized by: SPIE Student Chapter University of Utah

**"Plasmonic Nano-Optics: Modeling, Fabrication, and Characterization of plasmonic structures with sub-10 nm features"**

**Abstract:** This talk summarizes recent work on plasmonic nanostructures with sub-10 nm gaps. Plasmons are charge oscillations which can be tuned and magnified with metallic nanostructures. These oscillations produce very large local electrical fields which enhance optical applications. This enables high sensitivity in sensor applications and greater efficiencies in light collection applications. Recent work has revealed that dual-width plasmonic slit structures with sub 10-nm gaps can improve enhancements over standard period slit structures. We have demonstrated the capabilities to fabricate sub 10-nm features with the nanomasking technique, with feature resolution smaller than conventional lithography limits, and the spectroscopic capabilities of the Plasmonic Nano-Optics lab at the University of Arkansas will be highlighted. Finally, recent plasmonic nanogap work in collaboration with researchers at the NRL will be discussed including nanosphere metasurfaces.

Joseph B. Herzog
Department of Physics,
University of Arkansas, Fayetteville, AR

Biography

Joseph B. Herzog is an assistant professor in the Department of Physics at the University of Arkansas. He received his BS degree from Louisiana State University and his MS degree and PhD from the University of Notre Dame in Electrical Engineering with advisors who had PhDs in physics. He was a postdoctoral research associate at Rice University in the Department of Physics & Astronomy under Douglas Natelson before joining the University of Arkansas. In the summer of 2017 he was a Fellow at the U.S. Naval Research Laboratory (NRL) in Washington, DC as part of the in the Office of Naval Research Summer Faculty Research Program. At the NRL he worked in the Center for Biomolecular Science and Engineering, which is a division of the Materials Directorate at the NRL. His research focuses on nano-optics, including plasmonics and photonic crystals.
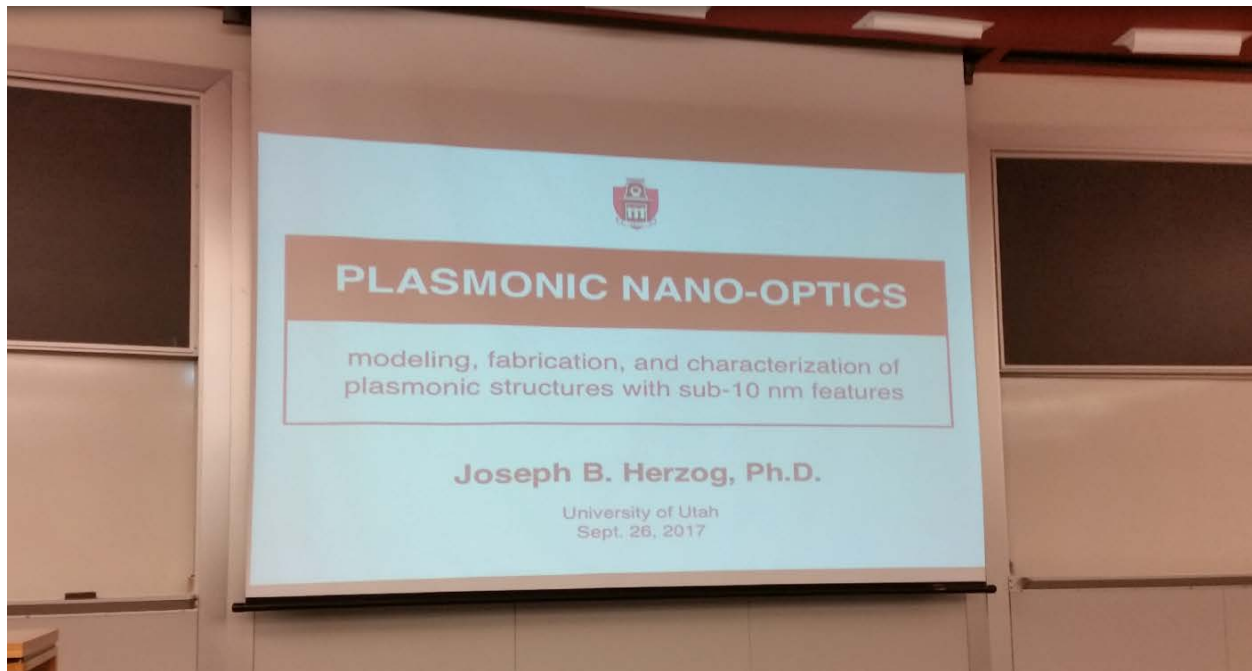
*** *The public is invited* ***

**SPIE.** STUDENT CHAPTER
UNIVERSITY OF UTAH

Some Pictures of the event:

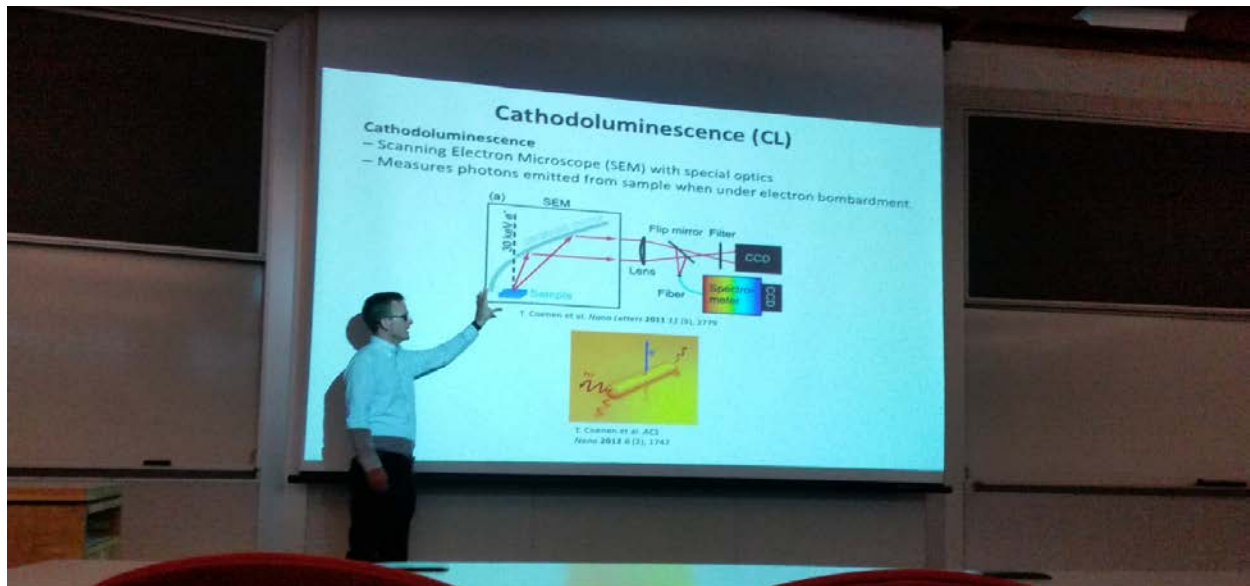Fliers in some notice boards for advertising:
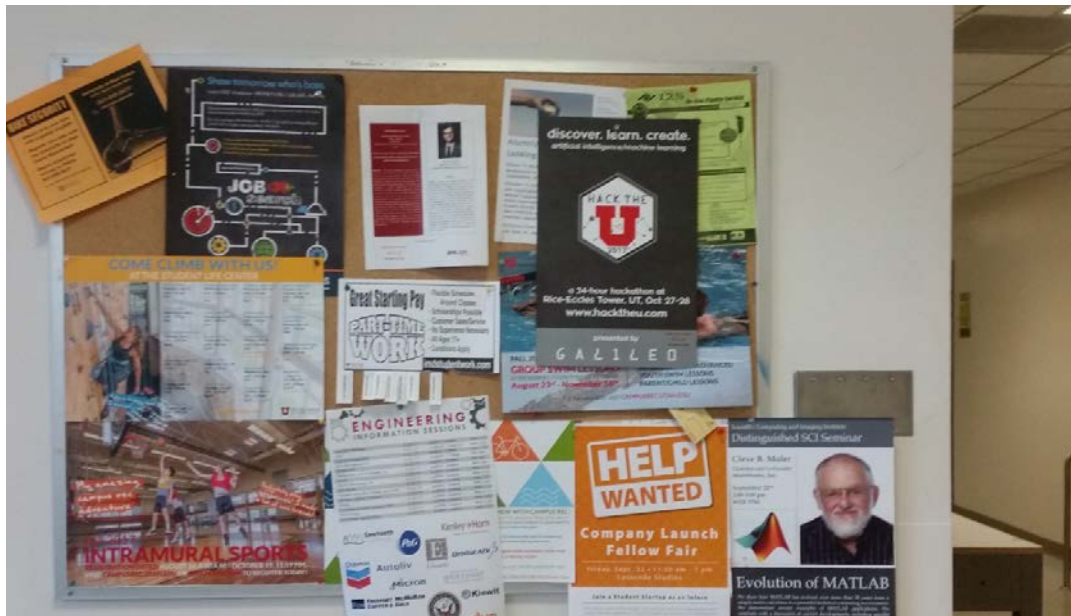
Title slide from Prof. Herzog from his presentation:



Prof. Herzog talking on SPIE events and conferences:

Prof. Herzog explaining one of his slide:



Picture of the Audiences:

**Funds Balance**

Chapter Activity Grant: $500

Solar Eclipse event: - $ 150

SPIE visiting lecturer refreshments: - $20

SPIE visiting Lecturer Flier: - $5

Left to help with next year's activity: - $ 220