SPIE NTU 2019 Student Chapter Officers Advisor:

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1. Introduction

In this year, the student chapter office election was held in January, and Mr. Hsin-Yu Kuo was re-elected to be the president of SPIE NTU Student Chapter. He teams up with chapter members and offices to proceed several activities. We participated in Taiwan Innotech Exposition in Taipei World Trade Center. Beside introducing metasurface samples, our members saw many innovative and interesting studies in Taiwan. In this March, NTU gave us an opportunity to hold student chapter exhibition. We took advantage of this festival to introduce the basic knowledge of optics and history of SPIE student chapter for junior and senior high school students. Furthermore, thanks for prof. Tsai’s support, there are lots of professors and researchers gave our chapter members amusing talk which enlighten us with some novel and Creative ideas on optics and photonics.

The members of NTU Student Chapter reach to 15 people this year. (Table 1) Thanks to the support from SPIE, NTU Student Chapter will keep holding more optical activities and sharing the valuable experience with attendances in the future.

Please find the fruitful results as below for your reference.

### 2019 SPIE NTU Members

<table>
<thead>
<tr>
<th>Hsin-Yu Kuo</th>
<th>Mu-Ku Chen</th>
<th>Jia-Wern Chen</th>
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<tr>
<td>Ting-Yu Hsieh</td>
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<td>Bhaskar Jyoti Borah</td>
<td>Kai-Yao Chang</td>
<td>Tian-Yue Chen</td>
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<td>Jau-Yu Chou</td>
<td>Wei-Che Hsieh</td>
<td>Yu-Ming Liao</td>
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<tr>
<td>Chao Wang</td>
<td>Huai-Yung Wang</td>
<td>Jing-wei Yang</td>
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Table 1. Members list of NTU student chapter.
2. Activities and Special Events

2.1 Officers Election and Farewell Party

In January 2019, the members of NTU SPIE student chapter would have a Farewell Party to select the next president and officers with our chapter advisor, Prof. Din Ping Tsai. We would invite the members of NTU SPIE student chapter to give an annual summary, expressing achievements and difficulties during this year. This year, Hsin-Yu Kuo was re-elected to be the president of SPIE NTU Student Chapter and Jia Wern Chen was elected as the vice-president of NTU SPIE student chapter (Figure 1).

2019 SPIE officers elections result

Figure 1. The result of the SPIE student officer’s election
2.2 Student Chapter Exhibition in NTU

In each March, National Taiwan University would have a Student Chapter Exhibition (Figure 2). This is one of the most important activities for the freshman and adjacent senior high school students because all student associations of NTU join this exhibition as well. We take advantage of this exhibition to introduce optics and SPIE student chapter to high school and college students. We prepared lots of interesting and striking teaching material to demonstrate the optics phenomena, such as kaleidoscope, lens, hologram and so on, and illustrated the basic principle behind the phenomenon to them. In addition, we introduced fantastic phenomenon of optics to younger students though laser games and made them like optical physics.

There were more than 200 people visiting our student chapter booth. When they came to our stand, we also introduced the SPIE student chapter in National Taiwan University.
Figure 2. Student Chapter Exhibition in National Taiwan University. We demonstrated the optical game and experiment for many students and people.

2.3 Participating in science and technology exhibitions

In last December, our advisor gave us the opportunity to participate in Future Tech Exhibition in Taipei World Trade Center. There were many novel and fascinating technology applications and studies published. In these exposition, we known the latest developments in many regions in Taiwan such as photoelectric, biologic, aerospace, artificial intelligence technologies and so on (Figure 3). We also introduced the principle and phenomenon of metalens to visitor which is the research domain with our advisor. Metalens is consist of ten thousand of nanoantenna that can achieve miniaturization of the lens to micro- or nano-order.
2.4 Optical interactive demonstration in junior high school

On October 27th, we had an optical related activity for junior high students at Taipei municipal Zhongzheng junior high school. Six missions in this activity contained optical knowledge like refraction, reflection, total internal reflection, birefringence, optical fiber, three primary colors. We turned these concepts into games, and students would get a password after they finish a mission. Finally, we announced the full password, and sent each student two polarizers as the customs clearance prize.
Figure 4. The Optical Related Activity at Zhongzheng junior high school.

2.5 Invited Talks and workshops

In this year, it’s our honor to invite many well-known speakers to give us professional and interesting talks such as Dr. Vassili, Dr. Ou, Dr. Chen, prof. Atwater, prof. Sun and so on. (Figure 5). These talks are public for everyone as long as they’re interested in the topics. By promoting the information of talks on website and posters, we hope not only our chapter members but also other students can join this informative event.
2.6 End-of-Semester Gathering and Farewell Party

To celebrate the new and farewell the graduated members, we took the group photo and dined together with members in this August (Figure 6). This gathering not only connected the relationship with each member but also provided a place to share the experience with new members. In last, the president of SPIE student chapter Hisn-Yu Kuo shared the held activities in this semester with student members and thanks the graduating members for their contributions to NTU SPIE student chapter.
2 **Financial information**

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3 **Summary**

We are very grateful for the support of SPIE. In this year, we successfully held a lot of activities, including student chapter exhibition in NTU, participating in science and technology exhibitions, Optical interactive demonstration in junior high school, Beginning/End-of-Semester Gathering, Farewell party and many invited talks. We would like to thank for our student chapter advisor Prof. Din Ping Tsai and Prof. Gong-Ru Lin, who always give us support and recommendation. We look forward to holding more activities and making our student chapter prosper in the future. Best wishes to the coming year!