

SILESIAAN UNIVERSITY OF TECHNOLOGY SPIE STUDENT CHAPTER ANNUAL REPORT 2014

INTRODUCTION

The Silesian University of Technology SPIE Student Chapter was created in August 2005 at the Silesian University of Technology in Gliwice, Institute of Physics, Department of Optoelectronics at the initiative of prof. Tadeusz Pustelny, and Ph.D Kamil Barczak. The chapter members are Ph.D. students from the Institute of Physics, as well as students of Electronics and Telecommunication from Electrical Engineering faculty at Silesian University of Technology. Currently Silesian University of Technology SPIE Student Chapter is localized in The Department of Optoelectronics under the Faculty of Electrical Engineering.

ADDRESS

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CHAPTER WEB SITE

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LIST OF THE STUDENT CHAPTER MEMBERS

1. Sabina Drewniak
2. Ewelina Fedorowicz
3. Tomasz Herzog
4. Piotr Kaluzynski
5. Krystian Mistewicz
6. Aneta Olszewska
7. Pawel Poselek
8. Marcin Procek
9. Bartłomiej Toron
10. Barbara Wajnchold



CHAPTER ACTIVITIES

The activities of Silesian University of Technology SPIE Student Chapter as in previous years, are mainly focused on:

- Popularization of photonics science in the local community
The aim is to increase interest in science and encourage young people to study optoelectronics at the Faculty of Electrical Engineering at the Silesian University of Technology.
This task is mainly carried out through our participation in the organization of a number of scientific events for young people
- Developing the competence of Chapter members in the field of optoelectronics and provide possibility for knowledge exchange as well as develop personal relations with members of other chapters/institutions.
For this purpose, we participate in the organization of scientific conferences and we take active part in conferences sharing our experiences

These goals were realized in 2014 through the following activities:

The Opto Meeting for Young Researchers & 9th International SPIE Students Chapter Meeting, 1st-5th July 2014, Gdańsk

This year's conference was organized in Faculty of Electronics, Telecommunications and Informatics of Gdańsk University of Technology. Silesian Univ of Technology SPIE Student Chapter with other SPIE Chapters from Poland has supported the SPIE Student Chapter from Gdańsk in organizing Opto Meeting. This conference is organized every year in Poland in cooperation with SPIE Student Chapter from Torun, Gliwice, Wrocław, Gdańsk and Warsaw.

Topics of the conference include but are not limited to:
optical metrology, optical materials, quantum optics, optoelectronics, imaging techniques, biomedical optics, optical modeling and simulations, quantum computing, fiber optics, optical communication, sensors.

This event is very popular among young scientists from Central and Eastern Europe. This year, the Opto Meeting conference was represented by four people from our chapter who were presenting the results of their scientific work and the activities of our chapter. The members of our chapter were presented the following topics during their lectures and poster presentations:

Marcin Procek, Erwin Maciak, Agnieszka Stolarczyk, Tadeusz Pustelny
"Resistance gas sensors based on nanostructures of metal oxide wide band gap semiconductors"

Tomasz Herzog, Kazimierz Gut, "Simulation and analysis of bimodal interference structure based on SU-8 polymer"

Piotr Kałużyński "Schlieren imaging system for visualization in refractive index fluctuations "

Paweł Posełek "Thin SiO₂ layer etching and thickness measurement by thin layer spectroscopy"



Fig. 1. Marcin Procek with members of other OSA and SPIE Chapters during the travel to Gdynia

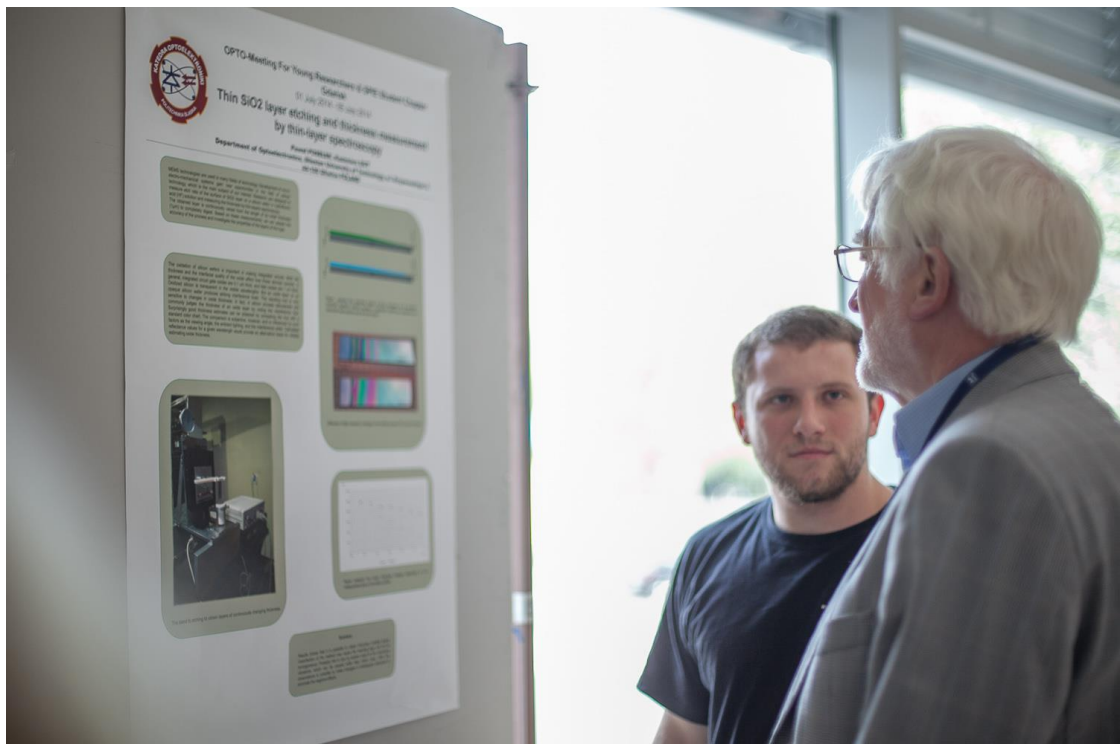


Fig.2. Paweł Posełek with Professor Brian Culshaw on poster session

Faculty of Electrical Engineering Open Days 2013.12.04

The aim of the Faculty of Electrical Engineering Open Days was to increase interest in science and encourage young people to study at the Faculty of Electrical Engineering at the Silesian University of Technology. Members of The Silesian University of Technology SPIE student chapter organized workshops for high school students and undergraduates. We have prepared several presentations in the form of demonstrations, workshops and games presenting the properties and applications of light in many areas of science and technology. The following workshops have been prepared by us:

Semiconductor light source in extreme temperatures (Fig.3)

During the workshop LED behaviors at very low and high temperatures were shown. There was a clear change in color of the emitted light due to changes in temperature, causing changes in the width of the energy gap

Laser Show (Fig. 4)

Laser show preceded by a presentation of the lasers principles of operation

Waveguide workshop (Fig.5)

Workshops in which participants could perform their own model of the fiber optic illuminator based on USG gel or jelly and cheap source of light

Modern multimedia techniques (Fig.6)

Presentation of modern multimedia techniques such as augmented reality, gesture control. There were also carried out workshops on modern technology in the field of image management and multimedia.



Fig. 3. Tomasz Herzog presenting LED behaviors in extreme temperatures



Fig. 4. Laser show

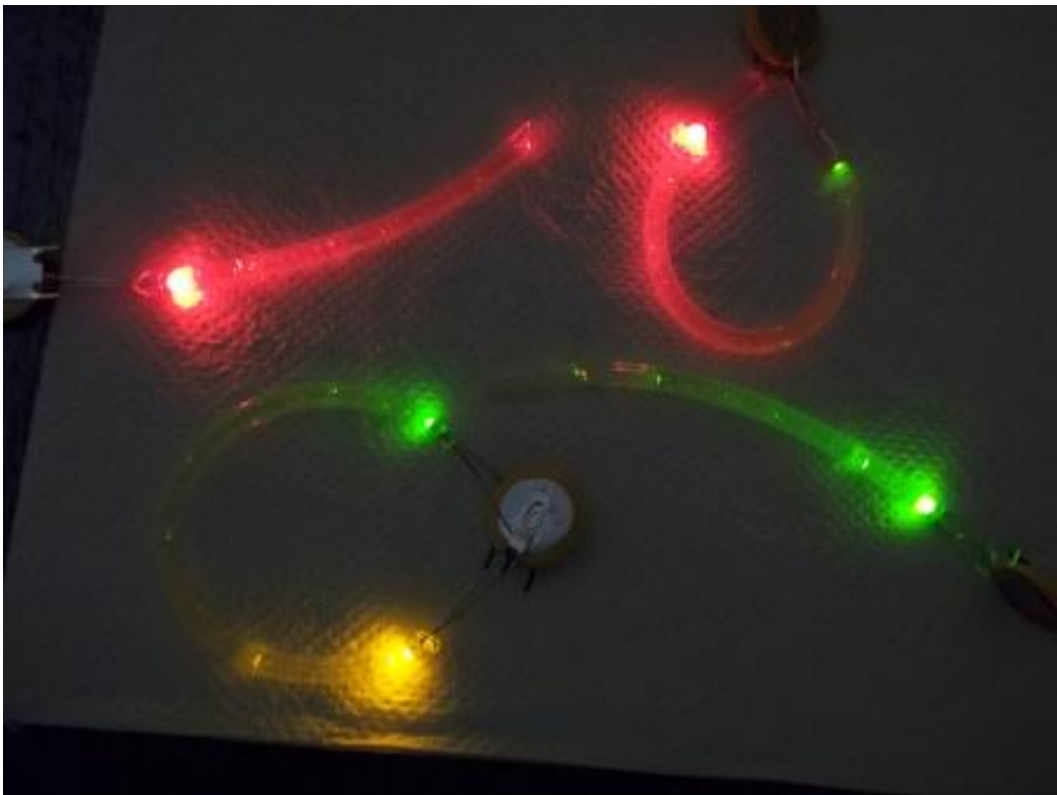


Fig. 5. Waveguides with light sources that were made by the students during the workshop



Fig. 6. Presentation of augmented reality applications

Khet 2.0 Tournament 27.03.2014

Our chapter organized a tournament of Khet 2.0 game, which took place at the Silesian University of Technology. To the game we invited students and Ph.D. students from the Department Of Electrical Engineering. The tournament was attended by members of our Chapter and potential candidates for membership. During the tournament, students could get acquainted with the game Khet 2.0, its principles and benefits. The first three places were awarded, and awards were game Khet 2.0 and backpacks.



Fig. 7. Tournament room



Fig. 8. Participants during the game

Optics + Photonics, 16 - 21 August 2014, San Diego, California, USA

Participation of Aneta Olszewska in Optics + Photonics conference 16-21 August 2014 in San Diego California thanks to Travel Grant award.



Fig.9. Aneta Olszewska during a presentation "Activities of Silesian University of Technology SPIE Student Chapter"

Participation in the conference is very valuable for us, because of the opportunity to exchange experiences with other young scientists. Moreover, we have the opportunity to get to know another culture and make friends with the conference participants from around the world. For each of our members, the conference and a trip to the United States is an unforgettable adventure.

Scheduled activities

- demonstration of various optical phenomena for High School students in the laboratories of Department of Optoelectronics.
- organizing Khet 2.0 tournament for students
- participation of the Silesian University of Technology SPIE Chapter member in the forthcoming SPIE Optics + Photonics conference in San Diego 2015.

Financial Report

Income

Activity grant 1 398,80 PLN

Expenses (KHET 2.0 tournament)

purchase of 6 KHET 2.0 games 970 PLN

Total expenditure 970 PLN

Remaining Money 428,80 PLN