

SPIE Student Chapter, Wroclaw University of Technology
Faculty of Fundamental Problems of Technology
Wybrzeze Wyspianskiego 27
50-370 Wroclaw
<http://www.if.pwr.wroc.pl/spie>

**Report on the activities of SPIE Student Chapter
at Wroclaw University of Technology
for the period 06.2006-12.2006**

1. SPIE Annual Meeting in San Diego



“S” has sponsored by Mateusz Bednorz (SPIE-Gliwice, Poland) and Anna Pakula (SPIE-Warsaw, Poland)
“P” has been sponsored by Alvaro Bedoya (SPIE-Cali, Columbia) and Catalin Constantinescu (SPIE-Bucharest, Romania)
“I” has sponsored by Artur Podhorodecki (SPIE-Wroclaw, Poland)
“E” has sponsored by Kateryna Yablochkova (SPIE-Kiev, Ukraine), (SPIE, Russia) and (SPIE, Mexico)

This year, the present president of our SPIE Chapter, Artur Podhorodecki, participated in the SPIE Annual Meeting as well as in Optics & Photonics conference in San Diego. As a consequence of this meeting, many new scientific as well as friendly contacts have been developed and many detailed information concerning SPIE Society have been delivered to our Student Chapter. All these together make our Chapter more professional and strongly develop our activities.

2. ALT'06, Conference in Brasov, Romania



Mateusz Bednorz (SPIE-Gliwice, Poland), Joanna Polak, Artur Podhorodecki (SPIE-Wrocław, Poland), Catalin Constantinescu (SPIE-Bucharest, Romania)

Due to friendly cooperation, which started during the SPIE Annual Meeting in San Diego this year, between our chapter and SPIE chapter in Bucharest, Romania, the visit of our current president, Artur Podhorodecki in Romania became possible. The conference has been mostly financed by Romanian SPIE Chapter and joined founders of Wrocław SPIE Chapter and Gliwice SPIE Chapter since trip and accommodation were planned and cost were shared together with friendly Chapter from Gliwice. During the conference preliminary plans of scientific collaboration between Chapter in Bucharest and Wrocław have been discussed.

3. Elections

Due to the fact, that some of our colleagues finished their PhD studies this year and to recruit new members, our Chapter decided to elect a new board. The results of our selections are presented beneath.

Advisor: Prof. Waclaw Urbańczyk

President: MsC. Artur Podhorodecki

Vice-President:

MsC. Gabriela
Stankiewicz

Treasurer:

MsC. Dorota Szczęsna

Secretary:

Karol Tarnowski

4. Festival of Science

Each year our Chapter is involved in helping in the organization of the Festival of Science which takes place annually at our University. Also this year, our members have presented some physical experiments for thousands of students and their teachers at our University.

5. Magic of Physics (Primary Schools)



This year our Chapter started a new programme, partially sponsored by our Institute of Physics, called *Magic of Physics*. In this programme, members of our Chapter (Jacek Olszewski, Artur Podhorodecki, Adrian Olszewski) have shown some experiments related to optics (but not only) in different primary schools in our city. The feedback of these presentations was very inspiring and we are going to develop our facilities and level of presentation to continue this Programme on larger scale in our city.



6. OPERA-2015 Symposium for Photonics Technologies

European Committee entrusted our Institute with the task of organizing the Symposium for Photonics Technologies for 7th European Framework Programme. Our Chapter as active member of University society has participated in the organization of this very important event. Members of our Chapter were involved in reception service, sightseeing programme, multimedia staff, and also took active role in the scientific programme (poster session):

- **G. Zatoryb, A. Podhorodecki**, J. Misiewicz, J. Wójcik, P. Masher, Optical properties of silicon nanocrystals doped by Er^{3+} ions obtained by ECR-PECVD
- **M. Nyk, A. Podhorodecki**, W. Stręk, J. Misiewicz, Optical and structural properties of InN nanocrystals obtained by sol-gel technique
- **A. Podhorodecki**, J. Misiewicz, F. Gourbilleau, Influence of the hydrogen concentration on the optical properties of silicon nanocrystals obtained by co-sputtering
- **A. Podhorodecki, M. Nyk**, J. Misiewicz, W. Stręk, Optical properties of GaN nanocrystals doped by Eu^{3+} ions
- **J. Jarzab, A. Podhorodecki**, J. Misiewicz, G.K. Malyarevich., N. V. Gaponenko, Excitation mechanisms for Eu^{3+} ions doped into TiO_2 sol-gel film confined in mesoporous anodic alumina
- J. Domaradzki, A. Borkowska, D. Kaczmarek, **A. Podhorodecki**, J. Misiewicz, Optical and structural characterization of Eu and Pd-doped TiO_2 thin films

7. Career Incubator Programme (CIP)

This year our Chapter established a new project called *Career Incubator Programme (CIP)*. The basic idea of this project is to help young and well motivated students to *get in* the scientific world of optics and photonics and to help them to make the real steps to their future career. Each SPIE student (so-called SPIE *adept*) interested in this Programme has to spend “enough time” for helping in the well defined experiments during the summer/winter holidays in the laboratory of one of the SPIE PhD member (so-called SPIE *master*). As a result, student is a co-author of a scientific paper and his name becomes recognizable in the scientific community. Additionally, our SPIE Chapter will cover the cost of one international scientific student conference for student, who will make the best work during the Programme. This Programme also helps students to find the best for their future MSc supervisor and to involve into the most interesting for them scientific topics and to focus more efficiently on their future work.

8. Conference in Kiev

As a consequence of the CIP Programme, one student (*SPIE adept* Grzegorz Zatoryb, *SPIE master* Artur Podhorodecki) has been delegated to the Conference in Kiev, where he was presenting on the poster session the results obtained in the Laboratory of Advanced Spectroscopy of Semiconductors of prof. Jan Misiewicz.

9. Interdisciplinary Research Platform

During the first International Student Chapter Meeting organized in Wrocław by our Chapter, friendly collaboration between our Chapter and Chapter in Toruń in Poland has been extended and new promising collaboration between our Chapter and Chapter in Lviv in Ukraine has been started. As a consequence of this discussions, the scientific collaboration based on the combination of scientific possibilities (facilities, knowledge,...) has been started.

One of our members, G. Zatoryb started some preliminary experiments in the laboratories of the University of Nicolaus Copernicus in Toruń, where he was invited by one of the members of SPIE-Toruń Student Chapter. Also positive decisions concerning the collaboration between our chapter and SPIE-Student Chapter in Lviv have been already made.

10. Scholarship Programme

Our chapter plays also a role as an information centre concerning **MONABIPHOT** scholarship programme for students from outside Europe. By using the SPIE information network we deliver information about this programme to interested students from all over the world and contact them with the directors of the programme.

11. Publications

Members of our chapter are also strongly involved in the scientific life and develop their knowledge about optics and photonics. This year following papers have been published by our members

1. P. Lutsyk, J. Misiewicz, **A. Podhorodecki**, Ya. Vertsimakha, *Solar Energy Materials and Solar Cells* 91, 47 (2007).
2. **A. Podhorodecki**, R. Kudrawiec, M. Nyk, J. Misiewicz, and W. Streck, *Electrochemical Society Solid State Letters*, in press (2006).

3. **A. Podhorodecki**, J. Misiewicz, K. Nauka, *Physica Status Solidi C* 3, 3836 (2006).
4. **A. Podhorodecki**, M. Nyk, J. Misiewicz, W. Stręk, *Proc. SPIE* 6321, 63210O (2006).
5. V. Gayvoronsky, S. Yakunin, V. Pergamenshchik, V. Nazarenko, K. Palewska, J. Sworakowski, **A. Podhorodecki**, J. Misiewicz, *Ukr. J. Phys. Opt.* 7, 1 (2006).
6. **A. Podhorodecki**, J. C. Pivin, M. Nyk, R. Kudrawiec, J. Misiewicz, and W. Strék, *Super Lattices and Microstructures* 40, 533 (2006).
7. **A. Podhorodecki**, J. Misiewicz, J. Wójcik, E. Irvin, P. Masher, *Journal of Luminescence*, 121, 230 (2006).
8. E. L. Prociow, J. Domaradzki, **A. Podhorodecki**, A. Borkowska, D. Kaczmarek, J. Misiewicz, *Thin Solid Films*, in press (2006).
9. J. C. Pivin, M. Sendova-Vassileva, G. Lagarde, F. Singh, **A. Podhorodecki**, *J. Phys. D: Appl. Phys.* 39, 2935 (2006).
10. **A. Podhorodecki**, M. Nyk, R. Kudrawiec, J. Misiewicz, W. Strék, *Journal of Luminescence*, in press (2006).
11. R. Kudrawiec, M. Nyk, M. Syperek, **A. Podhorodecki**, J. Misiewicz, and W. Strék, *Applied Physics Letters* 88, 181916 (2006).
12. **A. Podhorodecki**, J. Andrzejewski, R. Kudrawiec, J. Misiewicz, J. Wojcik, B.J. Robinson, T. Roschuk, D.A. Thompson and P. Mascher, *Journal of Applied Physics* 100, 013111 (2006).
13. R. Kudrawiec, M. Nyk, **A. Podhorodecki**, J. Misiewicz, W. Strék, M. Wołczyr, *Applied Physics Letters* 88, 061916 (2006).
14. **A. Podhorodecki**, R. Kudrawiec, J. Misiewicz, N. V. Gaponenko, D. Tsykunov, *Optical Materials* 28, 685-687 (2006).
15. W. Rudno-Rudziński, R. Kudrawiec, **P. Podemski**, G. Sęk, J. Misiewicz, A. Somers, R. Schwertberger, J. P. Reithmaier, A. Forchel, *Appl. Phys. Lett.* 89, 031908 (2006).
16. **P. Podemski**, R. Kudrawiec, J. Misiewicz, A. Somers, J. P. Reithmaier, A. Forchel, *Appl. Phys. Lett.* 89, 061902 (2006).
17. **P. Podemski**, R. Kudrawiec, J. Misiewicz, A. Somers, R. Schwertberger, J. P. Reithmaier, A. Forchel, *Appl. Phys. Lett.* 89, 151902 (2006).
18. **J. Olszewski**, M. Szpulak, T. Martynkien, W. Urbańczyk, F. Berghams, T. Nasifowski, H. Thienpont, *Opt. Comm.*, w druku (2006).

Plans for the future:

Our plans for the next six months are as follows:

1. Winter Edition of CI Programme

2. Co-organization of the Scientific Conference for Students from Wrocław University of Technology

This is the fifth edition of this Conference, which is in fact an international conference in which students from Ukraine, Russia, United States and other countries show their scientific results.

3. Magic of Physics (High-schools)

We are going to continue this project and to expand our offer and show some lectures based on the Liquid Crystals Education Kit delivered to us from SPIE during Annual Meeting.

4. Student Chapter Meeting

This will be a second edition of the International Student Chapters Meeting. This is a scientific meeting where young scientists present their results. However, the difference in this kind of meeting is a strong relation of the participants to the different student societies, i. e. SPIE, OSA, etc. We believe that this condition, which will select researchers not only active in research but also active in social life, will improve the interaction between open-minded young people from different organizations. This will improve the transfer of information and in consequence will develop optics and photonics by building a platform for new scientific projects.

This year our chapter with collaboration with other Polish SPIE Student Chapters is going to invite prof. Kennedy to give a plenary lecture during the Meeting.

5. TARED-Education

Our Chapter is going to help with the promotion of our University, and particularly our Institute, during the Educational Fair TARED 2007.