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PhoBiA
Photonics Bionanotechnology Association

 **IEEE**



Wrocław University of Technology

III International Student Chapters Meeting

Book of Abstract

7-9 May 2008
Wrocław, Poland

Organizing Chapters

Wrocław Univ. of Technology SPIE Chapter
Wrocław Univ. of Technology OSA Chapter
Photonics and Bionanotechnology Association "PhoBiA"
IEEE Student Branch at Wrocław Univ. of Technology

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Artur Podhorodecki, WrUT, Poland
Dorota Szczesna, WrUT, Poland
Małgorzata Kowalska, WrUT, Poland
Jacek Olszewski, WrUT, Poland
Michalina Góra, Nicolaus Copernicus University, Torun, Poland
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Rostyslav Bilyy, NAS of Ukraine, Lviv, Ukraine
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Artur Podhorodecki, WrUT, Poland
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Technical editor

Dorota Szczesna

PROGRAM OF III INTERNATIONAL STUDENT CHAPTERS MEETING

7.05.2008 WEDNESDAY

A-1 room 136

08:30 Registration
09:00 Official Welcome

Session 1: Nanotechnology and Material Science: Optical characterization and material processing

Chairs: Artur Podhorodecki and Dorota Szczęśna, Poland

09:20 **Plenary lecture: prof. Hernando Garcia**
Ultrafast optics and optoelectronics

10:20 Coffee break

10:40 **Invited lecture: Artur Podhorodecki**
Optical properties of nanocrystalline materials

11:10 **R. Bilyy:** Bioconjugated nanoparticles as novel tools in biomedical diagnostics

11:25 **G. Zatoryb:** Influence of the annealing temperature on the excitation mechanism for europium-doped nanocrystalline titania film prepared by magnetron sputtering

11:40 **A.M. Voiculescu:** Structural and spectroscopical characterization of Re^{3+} (Re = Er, Eu, Tb) doped nanocrystalline Yag/YVO₄ produced by a sol-gel method/precipitation method

11:55 **A. Boś:** Growth of metal silicides on Si-surfaces as a function of the substrate temperature

12:10 **B. Bursa:** Influence of TiO₂ nanostructure on spectral properties and deactivation processes of anionic porphyrin

12:25 **C. Constantinescu:** Thin films of metal-organic complex systems deposited by maple (matrix assisted pulsed laser evaporation)

12:40 **N. Czechowski:** Absorption spectra of porous silicon with thin, phthalocyanine films

12:55 **F. Jipa:** Femtosecond laser processing of polymers using two-photon photopolimerization technique

13:10 **A. Nowicka:** Electron Paramagnetic Resonance of copper(II) of hippurate crystal

13:25 **D. Wroński:** Extended dipoles vs. point dipoles in modelling of electric field poled host-guest systems

13:40 **J. Prażmowska:** Gallium nitride layers deposited on sapphire template substrates in hve system

13:55 Lunch

Session 2: Sponsor Talk

Chair: Mateusz Bański, Poland

- 15:15 **A. Sozańska:** Combined scanning probe microscopy and Renishaw's Raman spectroscopy system: a new tool for nanotechnology
16:00 Coffee break
16:15- Course, part 1:
17:45
19:00- Grill Party on the boat
23:00

8.05.2008 THURSDAY

C-13 room 3.11

09:00-10:30 Guided tour around the old town

Session 3: Optical Techniques in Applications

Chair: Małgorzata Kowalska, Poland

- 11:00 Coffee break
11:20 **Plenary lecture: prof. Barbara Pierscionek**
The paradox of the eye lens
12:20 **Invited lecture: Michalina Góra**
Optical Coherence Tomography for ophthalmologic applications
12:50 **K. Karnowski:** Swept Source Optical Coherence Tomography
13:05 **W. Fojt:** Scanning Fabry-Perot Interferometer in Swept Source Optical Coherence Tomography
13:20 **M. Bojan:** White light interferometry for height artifact calibration specimen
13:35 **A. Sima:** Fourier transform digital holography
13:50 **P. Rozy:** Mach-Zehnder interferometer on the base of multimode interference structures
14:05 Lunch

Session 4: Optical Techniques and Photonic Materials in Applications

Chair: Michalina Góra, Poland

- 15:15 **Invited lecture: Jacek Olszewski**
Dispersion properties of photonic crystal fibers
15:45 **M. Pawlak:** Debye plasma environment influence on binding of the three-body muonic ion $\mu\mu$
16:00 **F. Garoi:** Vibrations mode viewing with DSPI
16:15 **I. Iordache:** Traceable measurement of lateral calibrators for nanoscale observation instruments

- 16:30 **M. Leniec:** Three pinholes experiment as extension Young double-slit experiment
 16:45 Coffee break
 17:00- Course, part 2:
 18:30
 19:00 Reception – up to the end

9.05.2008 FRIDAY

B-1 room 514

Session 5: Photonic and Biophotonic Materials and Applications

Chair: Catalin Constantinescu, Romania

- 9:00 **Plenary lecture: Prof. Isabelle Ledoux-Rak**
 Nonlinear optical materials
 10:00 **Invited lecture: Katarzyna Matczyszyn**
 Applications of nonlinear materials
 10:30 Coffee break
 10:45 **J. Olesiak:** Nonlinear optical properties of liquid crystalline phases in DNA
 11:00 **I. Bulik:** Synthesis, thermal behavior and charge transfer properties of oligiothiophenes derivatives
 11:15 **M. Bański:** Influence of sol-gel matrices on optical propertice of europium ion (Eu^{3+})
 11:30 **W. Kordas:** Anomalous diffusion in Surface Relief Gratings
 11:45 **B. Olejarz:** Influence of metal ion on photophysical and photochemical properties of porphyrins
 12:00 **P. Bhardwaj:** Near infra red spectroscopic imaging of oxygenation level of blood in human brain
 12:15 **M. Makowski:** Probing of adhesion interaction at atomic scale between silicon interfaces using atomic force microscopy
 12:30 **D. Nabagło:** Optical waveguides on SU8 polymer
 12:45 **R. Pascu:** Versatile spectroscopic ellipsometry to characterize various material thin films: principle and application
 13:00 Lunch

Session 6: Life Science

Chair: Joanna Olesiak, Poland

- 14:15 **M. Danielewska:** Association between longitudinal corneal apex displacement and cardiovascular system
 14:30 **P. Struk:** Design and numerical analyses of the human greater circulatory system and experimental researches of mechanical heart prosthesis
 14:45 **M. Ziemińczuk:** Examining DNA as a novel bio-polymer matrix

- for photonic applications
- 15:00 **A. Mann:** DNA condensation by poly-L-lysine at the single molecule level:
Role of DNA concentration and polymer length
- 15:15 **M. Żyrek:** Chelating copper ions by aminohydroxamic acids as a potential way
to remove them from the body
- 15:30 Coffee break

Session 7: Summarizing Workshop

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- 15:45- Summarizing Workshop
- 17:45
- 19:00 Goodbye Evening – up to the end