

XXth IEEE-SPIE Joint Symposium on Photonics, Web Engineering, Electronics for Astronomy and High Energy Physics Experiments

21 - 27 May 2007

2007-05-21 Monday

08:00 BREAK

13:00 LUNCH

SESSION I - Lasers and their application (dr inż. Z. Patron)

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|-------|----------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 14:30 | Lasers application [invited] | Zbigniew Patron |
| 14:45 | Generation of "eye-safe" radiation in new Er-Yb laser glasses | Jarosław Młyńczak |
| 15:00 | Pulse generation, spectroscopy and transitions dynamics of Er ³⁺ ions in YAG host | Piotr Konieczny |
| 15:15 | Laser-produced plasma based on Xe/He gas puff target and tin rich thin layers, and their application as the source in EUV optics | Rafał Rakowski |
| 15:30 | Backscattering LIDAR for stand-off detection of aerosols | Mirosława Szopa |
| 15:45 | Construction of two-wavelength backscattering LIDAR for stand-off detection | Michał Muzal |
| 16:00 | Numerical Solution of Tissue Laser Welding Problem | Łukasz Urbański |

SESSION II - PERG/ELHEP Session

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|-------|-----------------------------------------------------------|-------------------|
| 16:15 | Universal Module Controller | Rafał Graczyk |
| 16:30 | Data Acquisition Module implemented on PCI Mezzanine Card | Łukasz Dymanowski |
| 16:45 | PCI Mezzanine Card with digital interfaces | Kamil Lewandowski |
| 17:00 | (filler) | |
| 17:15 | COFFEE/TEA BREAK | |

SESSION III - Biomedical Instrumentation Group (prof. A. Grzanka)

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|-------|---------------------------------------------------------------------------|----------------------|
| 17:30 | Selected trends in Biomedical Engineering [invited] | Antoni Grzanka |
| 17:50 | Hardware-software cosimulation as educational tool - open source approach | Wojciech Zabołotny |
| 18:05 | DSP algorithms in FPGA - architecture and implementation | Piotr Kolasiński |
| 18:20 | Ultrasonic Elastography | Lukasz Strzeszkowski |
| 18:35 | DINNER | |
| 19:30 | BREAK | |
| 21:00 | BEER & SAUSAGE / WINE & CAKE | |

2007-05-22 Tuesday

08:00 BREAKFAST

09:00 Symposium Opening. Tradition of IEEE-SPIE WILGA Symposia - prof. R. Romaniuk

09:05 15 years of hardware evolution for High Energy Physics experiments - dr K. Poźniak

SESSION IV - Packaging and Hybrid Circuits Technology (dr J. Kalenik, dr R. Kisiel)

09:20 High density packing and interconnections for hybrid microelectronics - Małgorzata Jakubowska
new trends in developing materials

09:30 Investigation of multiwalled carbon nanotubes in thick film silver conductors Marcin Słoma

09:40 Hybrid microstructures for capillary electrophoresis with microchannel in photosensitive layer Iwona Wyzkiewicz

09:50 Quality estimation of thick-film resistor terminations based on electrical parameters extraction Konrad Kielbasiński

10:00 Properties of thick-film conductors for high temperature application Konrad Kielbasiński

10:10 (filler)

10:25 COFFEE/TEA BREAK

SESSION V - Optoelectronic Sensors Session (dr M. Borecki)

10:40 A proposition of multi-parameter light transmission method for examination of liquids with short section of optical capillaries Borecki Michal

10:50 Temperature sensor based on capillary waveguide Piotr Miluski

11:00 Guiding of Rb atoms by capillary optical fibre Agata Iwaniuk

11:10 The properties and manufacturing of double-clad optical fibres Marcin Kochanowicz

11:20 The properties and manufacturing of polarization fibres Agnieszka Zadykiewicz

11:30 The physical and optical properties of TeO₂-ZnO glasses Jakub Klimaszewski

11:40 Optical properties of silica glasses doped with rare earth elements for optical fibre lasers Jacek Żmojda

11:50 Erbium doped glasses for optical fiber amplifiers Joanna Wójcik

12:00 Modeling and analysis of potential UV lasing properties of highly Pr³⁺-doped YAG waveguides Katarzyna Ławniczuk

12:10 Short wavelength emission properties of dysprosium doped YAG waveguides Mariusz Klimczak

12:20 UV-violet optical transitions and excitation schemes in Ho³⁺:ZBLAN fibers Mariusz Klimczak

12:30 (filler)

13:00 LUNCH

SESSION VI - Advances in Applied Optics (dr Dariusz Litwin, dr Jacek Galas)

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|-------|-----------------------------------------------------------------------------------------|----------------------|
| 14:00 | Optical Measurement Technology and Systems in the Institute of Applied Optics [invited] | Jacek Galas |
| 14:15 | Silicon Wafers for Helium Microscopy | Stefan Sitarek |
| 14:30 | Sensitive absorption measurements using Cavity Ring Down Spectroscopy | Adam Czyżewski |
| 14:45 | Diffraction Optics in the Institute of Applied Optics [invited] | Jaroszewicz Zbigniew |
| 15:00 | Present design of lens axicons and their history | Katarzyna Kołacz |
| 15:15 | Measurements of Gradient Index Elements | Marek Wychowaniec |
| 15:30 | Multimode Fiber Refractive Profile Considerations for Mode Group Diversity Multiplexing | Stepniak Grzegorz |
| 15:45 | Preparation and characterization of Pd nanocrystals embedded in a carbonaceous matrix | Justyna Kęczkowska |
| 16:00 | Zonal Compression of Greyscale Images Using Walsh and PWL Transforms | Wiraszka Dorota |
| 16:15 | COFFEE/TEA BREAK | |

SESSION VII - Pulse electronics & photoacoustics (dr T. Starecki)

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|-------|----------------------------------------------------------------------|-----------------------------------------|
| 16:45 | A pulser with inverted microstrip line for time domain reflectometry | Katarzyna Opalska ,
Stefan Misiaszek |
| 17:00 | Low-cost trigger circuit for digital oscilloscope | Aleksander Burd ,
Katarzyna Opalska |
| 17:15 | Statistical method of measuring MTBF factor in FLIP-FLOP circuits. | Piotr Z. Wieczorek |
| 17:30 | Comparison of FFT and LMS applied to photoacoustic signal detection | Tomasz Starecki ,
Tomasz Owczarek |
| 17:45 | Comparison of photoacoustic Helmholtz resonator models | Mariusz Suchenek |

SESSION VIII - Smart sensors - (dr inż. J. Weremczuk)

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|-------|-------------------------------------------------------------------------------------------------|-----------------|
| 18:00 | Electronic rhinological thermometer for three-point air temperature measurement in nasal cavity | Marcin Śnieg |
| 18:15 | Graphical user interface for Wireless Sensor Networks simulator | Tomasz Paczesny |
| 18:30 | Electronic control unit for two stream humidity generator | Roman Iwaszko |
| 18:45 | Wireless platform for smart sensor networks | Monika Kowalska |
| 19:00 | DINNER | |
| 20:00 | BREAK | |
| 21:00 | BEER & SAUSAGE / WINE & CAKE | |

2007-05-23 Wednesday

08:00 BREAKFAST

SESSION IX - Technical University of Rzeszów (dr J. Domin, dr T. Więcek)

- 09:00 Spectral Properties of Grating -1300 at PGS-2 Spectrograph [invited] Jan Domin
- 09:30 Determination of Poisson Ratio for Auxetic Materials [invited] Tomasz Więcek
- 09:45 Measurements of relaxation time of fiber amplifiers Agnieszka Szałwska
- 10:00 Using the CCD camera to the recording of the radiation emitted by LED matrix Joanna Parzych
- 10:15 Multisensor system for examination of a photoplethysmographic signal Dariusz Prokop
- 10:30 Low electric power supply via optical fibre Andrzej Smolarz
- 10:45 Fiber Bragg Grating reconstruction by using of the Genetic algorithm Piotr Kisala
- 11:00 COFFEE/TEA BREAK

SESSION X - Photonic / Liquid Crystal Fibers and Devices (prof. T. Woliński)

- 11:15 Investigation of polarization effects in photonic liquid crystal fibers Marzena Tefelska
- 11:30 Investigation of partially coherent light propagation in nonlinear crystals. Paweł Poziemski
- 11:45 Propagation of partially coherent light in electrooptical materials. Mikołaj Gliński
- 12:00 Supercontinuum Generation in Photonic Crystal Fibers with a Nanosecond Laser Aleksandra Czaplą
- 12:15 (filler)
- 13:00 LUNCH

SESSION XI - Optimal learning systems in technology and medicine (dr S. Jankowski)

- 14:00 Improv support vector machine for fast defect detection in semiinsulating materials based on photoinduced spectroscopy [invited] Stanisław Jankowski ,
Janusz Będkowski
- 14:15 Implementation of relevance vector machine for defect structure analysis in semi-insulating GaAs Stanisław Jankowski ,
Przemysław Danilewicz,
Zbignie
- 14:30 Geometrical analysis of decision boundary to reduce the complexity of support vector machine Stanisław Jankowski ,
Giuseppe Di Salvo
- 14:45 Application of local cluster neural network to defect structure analysis of semi-insulating GaAs Stanisław Jankowski ,
Tomasz Pichlak
- 15:00 Neural classifier for risk recognition of sustained ventricular tachycardia after myocardial infarction based on high-resolution Stanisław Jankowski ,
Jacek Wydrzyński

SESSION XII - Bialystok Technical University

- 15:15 Optical transmission of the active power filter cooperating with Battery Energy Storage control system Adam Kuźma
- 15:30 Incremental optical fibre transmission and reflection sensors Jacek Kuszniere
- 15:45 Mode mixer coupler Jacek Kuszniere
- 16:00 COFFEE/TEA BREAK

SESSION XIII - FP6 UE WARMER (prof. L. Opalski)

- 16:15 SEWING and WARMER Programs [invited] Andrzej Filipkowski
- 16:30 Towards a Web enabled multi-sensor water monitoring system: the EU FP6 [invited] Leszek Opalski
- 16:45 Modular system architecture for WARMER project Hubert Drabczyk
- 17:00 OGC SWE in WARMER project Hubert Drabczyk
- 17:15 Sensor probes and measurements stations in WARMER system Hubert Drabczyk
- 17:30 Comparison of mobile Palmtops oriented at applications in systems for Malicki Emanuel
- 17:45 Electrical properties of potentiometric sensors - an empirical study Piotr Z. Wieczorek
- 18:00 Modeling of potentiometric sensors sensitive to ions of valency one and two for possible applications in WARMER project Jan Ogrodzki
- 18:15 Simulation of potentiometric sensor array based water measurements Maciej Jankowski
- 18:30 Accuracy estimation of multi-sensor potentiometric measurements for water monitoring applications Marcin Karbowniczek
- 18:45 DINNER
- 19:45 BREAK
- 21:00 BEER & SAUSAGE / WINE & CAKE

2007-05-24 Thursday

- 08:00 BREAKFAST
- 09:00 Siewca pomysłów - Wspomnienie o profesorze Bohdanie Paczyńskim [invited] - prof. Michał Różyeczka

SESSION XIV - Pi of the Sky (doc. G. Wrochna, doc. L. Mankiewicz)

- 09:45 Full PI system and simulation Janusz Uzycki
- 10:00 MazePi - Extended Air Shower and GRB coincidence check via SOA Marcin Molak
- 10:15 The catalog of the variable stars from the "Pi of the Sky" data Majczyna Agnieszka
- 10:30 Providing on-line access to the 'Pi of the Sky' data Katarzyna Małek
- 10:45 COFFEE/TEA BREAK

SESSION XV - Pi of the Sky (doc. G. Wrochna, doc. L. Mankiewicz)

11:15	Algorithm for automatic estimation of quality of measurements	Joanna Falzmann
11:30	Mechanical Structure „Pi of the Sky” robotic telescope	Robert Pietrzak
11:45	Web interface for stars databases in the Pi of the Sky experiment	Marek Biskup
12:00	Nios implementation in CCD Camera for "Pi of the Sky" experiment	Maciej Kwiatkowski
12:15	Triggers in the Pierre Auger Observatory	Szadkowski Zbigniew
12:30	Measuring system for the waves of current, voltage and rotational velocity in Magnetic Bearings	Jan Zimon , Leslaw Rzakowski
12:45	Idea of "zero noise" CCD	Piotr Obroślak
13:00	LUNCH	

SESSION XVI - Linear accelerators in security and medical application (dr inż. R. Kisiel)

14:30	Leaves design optimization for single focused multileaf collimator for medical linear accelerator	Janusz Harasimowicz
14:45	Advanced control system for MLC	Krzysztof Sajna
15:00	Advanced control system for MLC - MLC Head	Grzegorz Plebański
15:15	Control system of the medical accelerator based on PLC	Artur Baczewski
15:30	WinCC-the presentation, analysis and archivization of the measured signals in medical accelerator control system	Agata Latała
15:45	DICOM based communication protocol for Coline accelerator	Michał Andrasiak
16:00	Radiotherapy Record and Verify System for Coline accelerators.	Kaja Ceglińska
16:15	COFFEE/TEA BREAK	

SESSION XVII - Thin films production (prof. M. Sadowski)

16:45	Ultra-High Vacuum Cathodic Arc Techniques [invited]	Sergio Tazzari
17:15	Recent achievements in ultra-high vacuum arc deposition of superconducting Nb layers	Lorkiewicz Jerzy
17:35	Analysis Of Structure Of Superconducting Nb Layers by Means of X-ray techniques	Robert Nietubyc
17:55	Ultra-High Vacuum Cathodic Arc For Deposition of Superconducting Lead Photo-Cathodes	Paweł Strzyżewski
18:15	(filler)	
18:30	DINNER	

SESSION XVIII - Post deadline session

- 19:30 Selected aspects of global linearization of non-linear state equation Paweł Myszkowski
- 19:45 Design 2-Channel oscilloscope with LabView Plamen Balzhiev
- 20:00 (filler)
- 20:15 BREAK
- 21:00 BEER & SAUSAGE / WINE & CAKE

2007-05-25 Friday

- 08:00 BREAKFAST
- 09:00 Palindromes in mathematics [invited] - prof. W.Plandowski
- 09:30 History of palindromes in Poland [invited] - prof. T. Morawski

SESSION XIX Bialystok University of Technology (dr inż. J. Forenc)

- 10:00 The use of parallel computations in a 2-D numerical simulation of non-stationary, non-axisymmetric thermal field in a cylindrical Robert Bycul
- 10:15 Parallel Computation of the SAR Distribution in a 3D Human Head Model Wojciech Walendziuk
- 10:30 A bridge-circuit for experimental simulation of quasi-static bending tests Adam Idźkowski
- 10:45 Copper electropolishing versus electrodes which modifying electrical field in the electrocrystallization process Anna Białostocka
- 11:00 The Algorithm of Optimal Linearization of the Non-Linear State Equation Jarosław Forenc
- 11:15 Simulation of the voltage transformer metrological characteristics. Michał Kaczmarek , Robert Chmielecki
- 11:30 COFFEE/TEA BREAK

SESSION XX - SPIE Poland Chapter (mgr inż. A. Michałkiewicz)

- 12:00 Studies on the Violet Light Laser Module parameters Dariusz Łukaszewski
- 12:15 Analysis and design of static Fourier-transform spectrometer using Wollaston prism array Małgorzata Dwórska
- 12:30 Numerical simulation of extended range interferometrical measurement techniques based on multi-wavefront shaping Marcin Szczupak
- 12:45 Numerical simulation of waveguide head for moiré interferometer. Przemysław Czapski
- 13:00 LUNCH

SESSION XXI - SPIE Poland Chapter (mgr inż. A. Michałkiewicz)

- 14:30 Interferometric tomography reconstruction by means of iterative algebraic algorithms Bartosz Bilski
- 14:45 3D shape measurement using structured light projection Jakub Krzesłowski
- 15:00 Application of 3D shape measurement system using structure light projection Grzegorz Mączkowski
- 15:15 X-ray diffraction as a tool of ORMOSIL gels' structure's investigation Eliza Chodkowska
- 15:30 Measurements of birefringence and sensitivity to external parameters in index guided photonic crystal fibers Anuszkiewicz Alicja
- 15:45 Measurements of transmission properties and bending losses in all-solid photonic bandgap fibers Stępniewski Grzegorz
- 16:00 COFFEE/TEA BREAK

SESSION XXII - Information Security (prof. T. Adamski)

- 16:30 [invited] Tomasz Adamski
- 16:45 Web application security – web server based IDS Arek Kalicki
- 17:00 Supervised Learning Classification Scheme Immune to Malicious Data Obfuscation Jakub Botwicz
- 17:15 Data Mining approach to intrusion detection. Krzysztof Cabaj
- 17:30 Searching for hard instances of CVP problem - cryptographic perspective Jacek Pardyak
- 17:45 Analysis of work of non-uniform fibre Bragg grating as a transducer of impulsive strains Aleksandra Sikora
- 18:00 Cryptography with DSP Processors Marek Wilczewski
- 18:15 Improving hard disk data security using hardware encryptor Andrzej Walewski
- 18:30 DINNER

SESSION XXIII - HEP Experiments [movies and discussion] (dr B. Mukherjee)

- 19:30 European XFEL, The Light of the Future the movie
- 19:55 The ATLAS Experiment the movie
- 20:15 (filler)
- 21:00 BEER & SAUSAGE / WINE & CAKE

2007-05-26 Saturday

- 08:00 BREAKFAST

SESSION XXIV - PERG/ELHEP and CARE/XFEL Session

09:00	Beam position measurement for CERN Proton Synchrotron	Grzegorz Kasprawicz
09:15	Testing equipment for SIR-2 detectors – construction, troubles and solutions.	Sitek Piotr
09:30	Mechanical design aspects of SIR-2: a new near-infrared spectrometer for the first Indian Mission to the Moon	Roman Orlik
09:45	Comparison of InGaAs detectors for SIR-2 experiment	Sitek Piotr
10:00	Multicavity Complex Controller for SC accelerator	Tomasz Czarski
10:15	Real time simulations for LLRF development and diagnostics	Piotr Pucyk
10:30	The Master Oscillator and phase reference distribution system at FLASH	Krzysztof Czuba
10:45	Optimizing VHDL loops and simplifying user input needed to connect to II	Krzysztof Korzunowicz
11:00	COFFEE/TEA BREAK	

SESSION XXV - PERG/ELHEP and CARE/XFEL Session

11:15	Radiation Dose Prediction at European XFEL [invited]	Bhaskar Mukherjee
11:30	The concept of IRES project	Dominik Rybka
11:45	IRES project - Mother Board development	Stefan Korolczuk
12:00	AVR Microcontroller Simulator for a Software Implemented Hardware Fault	Adam Piotrowski
12:15	BubbleCounter - dosimeter measurement application	Paweł Drabik
12:30	Vector Modulator for LLRF system in AMC standard	Marcin Smelkowski
12:45	AMC module Timing receiver (Trigger) & clock synthesizer	Michał Ładno
13:00	AMC module with 8xADC for ATCA project	Tomasz Klonowski
13:15	AMC module with 8xDAC for ATCA project	Robert Piotrkowicz
13:30	LUNCH	

SESSION XXVI - PERG/ELHEP and CARE/XFEL Session

14:30	Universal DOOCS Server	Jarosław Szewiński
14:45	Direct digital modulation system for LLRF	Szymon Tarnowski
15:00	Copper resonance structure - measurements and control	Mateusz Maciaś, Jakub Główka
15:15	Detection and estimation of cavity's IF signal envelope	Tomasz Stanislawski
15:30	Optical communication system for X-FEL project	Adrian Antoniewicz
15:45	EPICS based Simcon controller	Janusz Majnert
16:00	Diagnostic tools to accelerator FLASH by WWW	Sławomir Kosowski
16:15	FPGA control utility in JAVA	Paweł Drabik
16:30	Matlab to C converter for DSP processors	Tomasz Grzywina
16:45	COFFEE/TEA BREAK	

SESSION XXVII - PERG/ELHEP and CARE/XFEL Session

17:00	Research Group Management System	Kamil Maj
17:15	Set of measurement and control modules to be used in didactic laboratory of nuclear techniques	Łukasz Koniusz
17:30	Integrated Extension Board for On-board computer OBDH of SSETI ESEO satellite	Andrzej Cichocki

SESSION XXVIII

17:45	Analysis of simple current sources for Differential Current Mode Technology	Krzysztof Gołofit
18:00	Measurement of Polarization Mode Dispersion and analysis of it	Sławomir Andrzej Torbus
18:15	Partial reconfiguration – oriented design of logic controllers	Michał Doligalski
18:30	DINNER	

SESSION XXIX - PERG/ELHEP Freshman Session

19:30	(filler)
20:30	Closing Ceremony
20:40	BREAK
21:00	BEER & SAUSAGE / WINE & CAKE

2007-05-27 Sunday - Leisure Activities

09:00	BREAKFAST
11:00	LEISURE ACTIVITIES
13:00	LUNCH

14:00 LEISURE ACTIVITIES

17:00 DINNER