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Ryszard S. Romaniuk
Editor

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Contents

Conference Committee

Editorial

The printed book in the Internet era, Conference Opening Lecture, Stanislaw Rybandt, Warsaw University (Poland)

SESSION 1 OPTICAL COMMUNICATIONS, OPTICAL COMPUTING AND CONTROL THEORY

Some recent developments in positive and compartmental systems (Invited Paper) [5484-01]

T. Kaczorek, Warsaw Univ. of Technology (Poland)

Optical fiber transmission with wavelength multiplexing – faster or denser (Invited Paper) [5484-02]

R. S. Romaniuk, Warsaw Univ. of Technology (Poland)

3R regeneration in modern telecommunication systems [5484-03]

R. Wilk, G. Goralik, B. Borowicz, S. Patela, Wrocław Univ. of Technology (Poland)

Parallel negabinary signed-digit arithmetic operations: one-step negabinary, one-step trinary, and one-step quarternary addition algorithms (Invited Paper) [5484-04]

A. K. Cherri, H. A. Kamal, Kuwait Univ. (Kuwait)

Comparative analysis of the correlation model used to evaluate call blocking probabilities in several, most common AON network topologies [5484-05]

M. Hajduczenia, Białystok Univ. of Technology (Poland)

SESSION 2 TESLA – SUPERCONDUCTING LINAC AND FREE ELECTRON X-RAY LASER

The RF control system for the DESY X-FEL (Invited Paper) [xxxx-06]

S. Simrock, DESY, Hamburg (Germany)

Cavity control system – advanced modeling and simulations for TESLA linear accelerator and free electron laser [xxx-07]

T. Czarski, R. S. Romaniuk, K. T. Poźniak, Warsaw Univ. of Technology (Poland), S. Simrock, DESY, Hamburg (Germany)

Cavity digital control testing system by Simulink step operation method for TESLA linear accelerator and free electron laser [xxx-08]

T. Czarski, R. S. Romaniuk, K. T. Poźniak, Warsaw Univ. of Technology (Poland), S. Simrock, DESY, Hamburg (Germany)

Cavity control system – optimization methods for single cavity driving and envelope detection [xxxx-09]

T. Czarski, R. S. Romaniuk, K. T. Poźniak, Warsaw Univ. of Technology (Poland), S. Simrock, DESY, Hamburg (Germany)

TESLA cavity modeling and digital implementation with FPGA technology solution for control system [xxxx-10]

T. Czarski, R. S. Romaniuk, K. T. Poźniak, Warsaw Univ. of Technology (Poland), S. Simrock, DESY, Hamburg (Germany)

Functional analysis of DSP blocks in FPGA chips for application in TESLA LLRF system, [xxxx-11]

K. T. Pożniak, T. Czarski, R. S. Romaniuk, Warsaw Univ. of Technology (Poland),

FPGA based cavity simulator for TESLA test facility [xxxx-12]

W. M. Zabołotny, K. Buńkowski, T. Czarski, T. Jeżyński, K. T. Pożniak, P. Rutkowski, Warsaw Univ. of Technology, Poland, S. Simrock, DESY, Hamburg (Germany), R. S. Romaniuk, Warsaw Univ. of Technology (Poland)

Design considerations for the RF phase reference distribution system for X-ray FEL and TESLA [xxxx-13]

K. Czuba, Warsaw Univ. of Technology (Poland), S. Simrock, DESY, Hamburg (Germany)

FPGA based TESLA cavity SIMCON – DOOCS server design, implementation and application, [xxxx-14]

P. Rutkowski, R. S. Romaniuk, K. T. Pożniak, T. Jeżyński, P. Pucyk, Warsaw Univ. of Technology (Poland), M. Pietrusiński Warsaw Univ., S. Simrock, DESY, Hamburg (Germany)

Distributed, embedded, PC based, control and data acquisition system for TESLA cavity controller and simulator [xxxx-15]

W. Z. Zabołotny, P. Roszkowski, K. Kierzkowski, K. T. Pożniak, R. S. Romaniuk, Warsaw Univ. Technology (Poland), S. Simrock, DESY (Germany)

SESSION 3 ADVANCED ELECTRONIC AND PHOTONIC SYSTEMS FOR BAC/ZEUS DETECTOR AT HERA ACCELERATOR

Overview of the Backing Calorimeter after the ZEUS detector upgrade (Invited paper), [xxxx-16]

T. Jeżyński, Z. Łuszczak, K. Pożniak, P. Pluciński, G. Grzelak, K. Kierzkowski, M. Kudła, M. Pietrusiński, Warsaw Univ. of Technology, Warsaw University (Poland) and Oxford University (England), Institute of Nuclear Studies, Łódź (Poland)

First level trigger of the Backing Calorimeter for the ZEUS experiment [xxxx-17]

K. T. Pożniak, Warsaw Univ. of Technology (Poland), P. Pluciński, Institute for Nuclear Studies, Łódź (Poland), G. Grzelak, K. Kierzkowski, M. Kudła, Warsaw Univ., (Poland)

FPGA based implementation of hardware diagnostic layer for local trigger of BAC calorimeter for ZEUS detector [xxxx-18]

K. T. Pożniak, Warsaw Univ. of Technology (Poland)

Application of BAC diagnostic system for tuning of the performance of the position readout [xxxx-19]

T. Jeżyński, Warsaw Univ. of Technology (Poland), G. Grzelak, Warsaw Univ. (Poland)

Structure and state visualization system for BAC detector electronics in ZEUS experiment of HERA accelerator [xxxx-20]

K. T. Pożniak, A. Gierej, Z. Łuszczak, T. Jeżyński, R. S. Romaniuk, Warsaw Univ. of Technology, G. Grzelak, Warsaw Univ., (Poland)

Interactive monitoring system for backing calorimeter at ZEUS experiment, [xxxx-21]

K. T. Pożniak, R. S. Romaniuk, T. Jeżyński, Z. Łuszczak, M. Zaczek, Warsaw Univ. of Technology (Poland)

SESSION 4 ADVANCED ELECTRONIC AND PHOTONIC SYSTEMS FOR CMS DETECTOR AT LHC ACCELERATOR

Algorithm for L1 muon trigger based on six RPC planes [xxx-22]

A.Kalinowski, J.Krolikowski, G.Wrochna

FPGA based, fast, pipeline, parameterized sorter implementation for first level trigger systems in HEP experiments (Invited Paper) [xxx-23]

K.T.Poźniak, Warsaw Univ. of Technology (Poland)

Data transfer simulation for the RPC muon trigger of the CMS experiment [xxxx-24]

M.Górski, A.Kalinowski, J.Królikowski, M.Kudła, K.Poźniak, P.Zalewski, Sołtan Institute for Nuclear Studies, Institute of Experimental Physics, Warsaw University, Warsaw University of Technology

Irradiation effects in electronic components of the RPC trigger for the CMS experiment [xxxx-25]

Karol Bunkowski, Ivan Kassamakov, Jan Krolikowski, Krzysztof Kierzkowski, Maciej Kudła, Teppo Maenpää, Krzysztof Poźniak, Dominik Rybka, Eija Tuominen, Donnatella Ungaro, Wojciech Zabolotny

Internal interface for RPC muon trigger electronics at CMS experiment [xxxx-26]

K.T.Poźniak, M.Bartoszek, Warsaw Univ. of Technology, M.Pietrusiński, Warsaw Univ., (Poland)

SESSION 5 ADVANCED ELECTRONIC AND PHOTONIC SYSTEMS FOR ASTRONOMY

Search for optical flashes accompanying gamma ray bursts – “Pi of the Sky” Collaboration [xxxx-27]

M.Ćwiok, W.Dominik, M.Husejko, A.Kalicki, G.Kasprowicz, K.Kierzkowski, M.Jegier, L.Mankiewicz, K.Nawrocki, B.Pilecki, L.W.Piotrowski, K.T.Poźniak, R.S.Romaniuk, R.Sałański, M.Sokołowski, D.Szczygieł, G.Wrochna, W.Zabolotny, Warsaw Univ. of Technology, Warsaw Univ., Center for Theoretical Physics, Sołtan Institute for Nuclear Studies, Warsaw (Poland)

Study of visible light bursts detection algorithm for “pi of the sky” project [xxxx-28]

L.W.Piotrowski, Institute of Experimental Physics, Warsaw Univ., G.Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland)

Bringing modern astronomy into high-school classrooms, [xxxx-29]

L.Lehman, II High School Głogów, L.Mankiewicz, Center for Theoretical Physics, Polish Academy of Sciences, W.Śliwa, Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences, G.Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland)

Automatic measurement system for astronomical education [xxxx-30]

L. Mankiewicz, Center for Theoretical Physics, Polish Academy of Sciences, Warsaw (Poland), K.T.Poźniak, R.S.Romaniuk, P.Szamocki, Warsaw Univ. of Technology, G. Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland)

Sky Eye – Image processing software for amateur astronomers, [xxxx-31]

A.Kalicki, Warsaw Univ. of Technology, L.Mankiewicz, Center for Theoretical Physics, PAS, K.T.Poźniak, Warsaw Univ. of Technology, G.Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland)

SESSION 6 MATERIAL SCIENCE AND MATERIALS FOR OPTOELECTRONICS

Applications of GaN-based materials in modern optoelectronics (Invited Paper) [xxxx-32]

R. Dylewicz, S. Patela, R. Paszkiewicz, Wrocław Univ. of Technology (Poland)

Selection of electro-optic materials for Pockels Cells used In Q-switched Er:YAG lasers [xxxx-3]

P. Nyga, A. Zając, M. Skórczakowski, P. Konieczny, J. Świderki, Military Univ. of Technology, Warsaw (Poland)

Investigation of the mixed crystals with Raman scattering [xxxx-34]

K. Ochmański, A. Hulewicz, Poznań Univ. of Technology (Poland)

Is the level $v'=6$ of $A^1 \pi$ state perturbed in origin at $^{13}C^{16}O$ molecule? [xxxx-35]

J. Domin, M. Frań, B. Płaskoń, Rzeszów Univ. of Technology (Poland)

Investigation of filament using mechanical spectroscopy methods [xxxx-36]

L. Pękala, A. Podkościelny, A. Wasilewski, T. Więcek, Rzeszów Univ. of Technology (Poland)

SESSION 7 OPTICAL FIBRES

Effectiveness comparison between finite element and plane wave methods in modeling of photonic crystal fibres [xxxx-37]

M. Szpulak, T. Martynkien, W. Urbańczyk, Wrocław Univ. of Technology (Poland)

Polarimetric sensitivity of a three-mode elliptical-core fiber to strain [xxxx-38]

E. Chmielewska, W. Urbańczyk, Wrocław Univ. of Technology (Poland)

PMD compensation by using dynamically induced longitudinal strain in highly birefringent optical fibers [xxxx-39]

K. Szaniawska, P. Lesiak, T.R. Woliński, Warsaw Univ. of Technology (Poland)

Investigation of polarization-maintaining photonic crystal fibers [xxxx-40]

A. Witkowska, K. Sokołowski, P. Lesiak, T.R. Woliński, Warsaw Univ. of Technology (Poland)

Analysis of activation of active double-clad optical fibers in geometrical optics approximation [xxxx-41]

J. Świderski, P. Konieczny, A. Zając, M. Skórczakowski, P. Nyga, Military Univ. of Technology, Warsaw (Poland)

SESSION 8 OPTICAL FIBRE LASERS

Broadband light source for the III transmission window [xxxx-42]

A. Pieńkowski, K. Jędrzejewski, Warsaw Univ. of Technology (Poland)

High-power diode pumped Yb-doped silica fiber laser generating in near infrared range [xxxx-43]

J. Świderski, A. Zając, M. Skórczakowski, P. Konieczny, Military Univ. of Technology, Warsaw (Poland)

10 W side pumped Nd-doped double-clad fiber laser [xxxx-44]

J. Świderski, A. Zając, M. Skórczakowski, P. Konieczny, P. Nyga, Military Univ. of Technology, Warsaw (Poland)

Pulsed fiber laser generating at 1064 nm [xxxx-45]

J. Świderski, P. Konieczny, A. Zając, M. Skórczakowski, Military Univ. of Technology, Warsaw (Poland)

SESSION 9 ADVANCED, OPTOELECTRONIC AND OPTICAL FIBRE SENSORS

Control and measuring buses with amplitude fibre optical sensors (Invited Paper) [xxxx-46]
F. Szczot, Opole Univ. of Technology (Poland)

FORS – II as an optimum sensor for detection of the rotational seismic events [xxxx-47]
Z. Krajewski, L. R. Jaroszewicz, Military Univ. of Technology, Warsaw (Poland)

Estimation of the indication error in the fiber-optic polarization analysers [xxxx-48]
P. Marć, L.R. Jaroszewicz, T. Kostrzyński, Military Univ. of Technology, Warsaw (Poland)

Intensity-based fiber optic bend sensor for potential railway applications [xxxx-49]
K. Sokołowski, A. W. Domański, T. R. Soliński, Warsaw Univ. of Technology (Poland)

Linearization of periodic contrast function for fiber optic dislocation sensor [xxxx-50]
N. Palka, Military Univ. of Technology, Warsaw (Poland)

Concept of application of signals from fiber-optic system for flame monitoring to control separate pulverized coal burner [xxx-51]
W. Wójcik, T. Golec, A. Kotyra, A. Smolarz, P. Komada, M. Kalita, Lublin Univ. of Technology (Poland)

A single channel SQUID magnetometer for measuring magnetic field of human fetal heart [xxxx-52]
W. Bachir, P. Grot, Z. Dunajski, Warsaw Univ. of Technology (Poland)

SESSION 10 DIFFRACTION, HOLOGRAPHY, INTERFEROMETRY AND IMAGE PROCESSING

Near field digital hologram registration in partially coherent stationary object illumination [xxxx-53]
T. Kozacki, R. Józwicki, Warsaw Univ. of Technology (Poland)

Recording and reconstruction problem of Fourier transform holograms formed in $\text{LiNbO}_3:\text{Fe}$ [xxxx-54]
A. Andruchów, Wrocław Univ. of Technology (Poland)

Fundamental properties of the selected joint transform correlators for practical application in automatic images recognition [xxxx-55]
K. Fedak, I. Merta, L. R. Jaroszewicz, Military Univ. of Technology, Warsaw (Poland)

Analysis of possibility of application the wavelet transform in optical research methods [xxxx-56]
M. Suchańska, J. Kęczkowska, R. Belka, M. Płaza, S. Kałuża, Kielce Univ. of Technology (Poland)

Development of a miniature interferometric holography system [xxxx-57]
A. Michalkiewicz, M. Kujawińska, Warsaw Univ. of Technology (Poland)

Diffraction elements with extended depth of focus [xxxx-58]
N. Makowski, G. Miłucha, M. Sypek, A. Kołodziejczyk, Cz. Prokopowicz, Warsaw Univ. of Technology (Poland)

Numerical calculation of light propagation in off-axis region [xxxx-59]
Cz. Prokopowicz, Warsaw Univ. of Technology (Poland)

Adaptive cancellation of harmonic interferences in transcranial doppler signal [xxxx-60]
W.M. Zabołotny, Warsaw Univ. of Technology, P. Kałowicz, Institute of Fundamental Technological Research, Polish Academy of Sciences, J. Jurkiewicz, Medical Research Center, Polish Academy of Sciences, Warsaw (Poland)

SESSION 11 OPTOELECTRONIC COMPONENTS – PHOTODIODES AND LEDS

Silicon photodiodes and PIN diodes developed at the Institute of Electron Technology (Invited Paper) [xxxx-61]

M. Węgrzecki, I. Węgrzecka, J. Bar, W. Słysz, M. Grynglas, A. Uszyński, R. Grodecki, P. Grabiec, S. Krzemiński, T. Budzyński, A. Panas, Institute of Electron Technology, Warsaw (Poland)

Silicon avalanche photodiodes developed at the Institute of Electron Technology (Invited Paper) [xxx-62]

I. Węgrzecka, M. Węgrzecki, J. Bar, A. Uszyński, R. Grodecki, P. Grabiec, S. Krzemiński, T. Budzyński, Institute of Electron Technology, Warsaw (Poland)

SESSION 12 OPTICAL FIBRE LIGHTING TECHNOLOGY

The influence of power distribution inside the light fibre on its luminous intensity [xxxx-63]

A. Nikołąajew, J. Dorosz, Białystok Univ. of Technology, Białystok (Poland)

The analysis of influence of core parameters on light propagation in ring-core optical fibre [xxxx-6]

J. Koszelew, S. Koszelew, A. Rusaczyk, Białystok Univ. of Technology (Poland)

Characteristics of the luminous flux for side-light optical fibers [xxxx-65]

M. Zajkowski, Białystok Univ. of Technology, Białystok (Poland)

Optical lightning film – a new material for high optical energy transmission [xxxx-66]

M. Zajkowski, Białystok Univ. of Technology (Poland)

Influence of the side-light optical fibre length on its spectral response [xxxx-67]

M. Zajkowski, Białystok Univ. of Technology (Poland)

Dependence of coupling coefficient on mode number in multimode fiber coupler [xxxx-68]

J. Kuszniar, Białystok Univ. of Technology (Poland)

Coupling efficiency as function of crossing angle between core of multimode fiber in side coupler [xxxx-69]

J. Kuszniar, Białystok Univ. of Technology (Poland)

Influence of the discharge lamp working position in the illuminator on the illuminance distribution on the head of the optical [xxxx-70]

K. Zaremba, Białystok Univ. of Technology (Poland)

Coupling of fluorescent light sources with optical fibre plate [xxxx-71]

A. Pawlak, Central Institute for Labour Protection, Warsaw (Poland), K. Zaremba, Białystok Univ. of Technology (Poland)

SESSION 13 OPTICAL AND BROADBAND INTERNET TECHNOLOGIES AND TECHNIQUES

Web-oriented interactive environment for distance education in study of semiconductor lasers [xxxx-7]

I.N. Keleberda, A.V. Shulika, V.V. Sokol, I.M. Safonov, T.S. Sakalo, P.S. Ivanov, I.A. Sukhoivanov, N.S. Lesna, Univ. of Radioelectronics, Kharkov (Ukraine)

Virtual laboratory of power electronics – pulse width modulation in three-phase converters [xxxx-73]

R. Bracha, Warsaw Univ. of Technology (Poland)

Web-based encyclopedia of physical effects [xxxx-74]

A.Papliatsayeu, M.Repich, B.Ilyushonak, A.Hurbo, K.Makarava, V.Lutkovski, Belarusian State Univ., Minsk (Belarus)

Webometrics – can we measure the Internet? [xxxx-75]

M.Kaliczyńska, Technical University of Opole

Broadband, modular, interactive, information system for research department in university environment [xxxx-76]

K.T.Poźniak, R.S.Romaniuk, J.Bury, W.Koprek, A.Orzelowski, Warsaw University of Technology (Poland)

SESSION 14 DSP AND RADAR IMAGING – PART I

Preprocessing of transient signals [xxxx-77]

A. Kawalec, Academy of Mining and Metallurgy, Kraków (Poland)

Performance analysis of digital compression filters for radar application [xxxx-78]

B. Dawidowicz, M. Purchla, M. Malanowski, T. Filipek, Warsaw Univ. of Technology (Poland)

Adaptive multiuser detection for DS-CDMA systems [xxxx-79]

J. Falkiewicz, Warsaw Univ. of Technology (Poland)

Amplitude and quadrature component distributions of terrain backscattering for frequency band 10 – 140 GHz [xxxx-80]

E. Groshko, Kharkov University of Technology (Ukraine)

Simulation of maneuvering target tracking algorithms using dynamic programming [xxxx-81]

A. Holiczer, Białystok Univ. of Technology (Poland)

Maneuver detection algorithm based on probability density function estimation with use of RBF and HRBF neural network [xxxx-82]

K. Konopko, D. Jańczak, Białystok Univ. of Technology (Poland)

PCI bus bridge for MC680x0 based computer system using PLD technology [xxxx-83]

G. Kraszewski, Białystok Univ. of Technology (Poland)

Need for speed in digital signal processing (Invited Paper) [xxxx-84]

K. Kulpa, Warsaw Univ. of Technology (Poland)

Fuzzy logic and neural network in resources management of multifunction radars [xxxx-85]

Ł. Lewczuk, Military Univ. of Technology, Warsaw (Poland)

SESSION 15 DSP AND RADAR IMAGING – PART II

Multiple invariance ESPRIT for DOA estimation [xxxx-86]

M. Linczuk, Warsaw Univ. of Technology (Poland)

Discrete cosine transform using modified DPCM [xxxx-87]

W. Pogribny, M. Drechny, Bydgoszcz Univ. of Technology and Agriculture (Poland)

Simple motion compensation algorithm for unfocused synthetic aperture radar [xxxx-88]

M. Purchla, M. Malanowski, Warsaw Univ. of Technology (Poland)

Automotive radar (Invited Paper) [xxxx-89]

H. Rohling, Technical Univ. of Hamburg – Harburg (Germany)

Application of optical dispersion techniques in phased array antenna beam steering [xxxx-90]

M. Muszkowski, E. Sędek, Industrial Institute of Telecommunications, Warsaw (Poland)

Monitoring system for fiber optic links [xxxx-91]

M. Muszkowski, E. Sędek, Industrial Institute of Telecommunications, Warsaw (Poland)

Generating realistic images using Kray [xxxx-92]

G. Tański, Warsaw University of Technology (Poland)

Software radar echo synthesizer [xxxx-93]

G. Tański, Warsaw Univ. of Technology (Poland)

Modelling of radar land clutter map for small grazing angles [xxxx-94]

E. V. Tarnavsky, G. P. Kulemin, Kharkov Univ. of Radioelectronics (Ukraine)

Author Index

Conference Committees

Program Committee

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Conference Session Editors/Chairs

1. Optical Communications, Optical Computing and Control Theory
Ryszard S. Romaniuk, Warsaw University of Technology (Poland)
2. TESLA – Superconducting Linac and Free Electron X-Ray Laser
Stefan Simrock, DESY, Hamburg (Germany),
Ryszard S. Romaniuk, Warsaw University of Technology (Poland)
3. Advanced Electronics and Photonics Systems for BAC/Zeus Detector at HERA Accelerator
Grzegorz Grzelak, Warsaw University (Poland)
Krzysztof T. Poźniak, Warsaw University of Technology (Poland)
4. Advanced Electronics and Photonics Systems for CMS Detektor At LHC Accelerator
Grzegorz Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland) and CERN, Geneva (Switzerland)
Krzysztof T. Poźniak, Warsaw University of Technology (Poland)
5. Advanced Electronics and Photonics Systems for Astronomy
Grzegorz Wrochna, Sołtan Institute for Nuclear Studies, Warsaw (Poland) and CERN Geneva (Switzerland)
6. Material Science and Materials for Optoelectronics
Jan Dorosz, Białystok University of Technology (Poland)
7. Optical Fibres
Feliks Szczot, Opole University of Technology (Poland)
8. Optical Fibre Lasers
Andrzej W. Domański, Warsaw University of Technology (Poland)
9. Advanced, Optoelectronic and Optical Fibre Sensors
Feliks Szczot, Opole University of Technology (Poland)
10. Holography and Image Processing
Tomasz R. Woliński, Warsaw University of Technology (Poland)
11. Lighting Technology
Jan Dorosz, Białystok University of Technology (Poland)
12. Optical and Broadband Internet Technologies and Techniques
Krzysztof T. Poźniak, Warsaw University of Technology (Poland)
13. DSP and Radar Imaging – Part I
Krzysztof Kulpa, Warsaw University of Technology (Poland)
14. DSP and Radar Imaging - Part II
Krzysztof Kulpa, Warsaw University of Technology (Poland)

Editorial

XIIth IEEE-SPIE Sympozjum "Photonics and Web Engineering" WILGA, 21-25 May 2003



Participants of the XII IEEE-SPIE Symposium in front of the WILGA Village, Warsaw University of Technology Resort meeting hall. There are sitting in the middle, from left: dr Ryszard S. Romaniuk, WILGA Symposium Chair; prof. Jan Dorosz, Białystok University of Technology; prof. Tadeusz Kaczorek, IEEE Poland Section, Warsaw University of Technology; prof. Danuta Bauman, Poznań University of Technology; prof. Tomasz Woliński, SPIE Poland Chapter Chair; dr Andrzej Domański, SPIE Poland Chapter Treasurer; Specificity of the symposium is that there are nearly all different participants each day. Various university groups from all parts of the country and international arrive and depart for certain topical sessions. Total number of participants was near 200 persons.

The international M.Sc. and Ph.D. students Symposium gathers in Warsaw University of Technology Resort in Wilga numerable representatives of technical universities from this country and the IEEE Region 8. The high patronage over this symposium is held by IEEE, SPIE, Polish Academy of Sciences and Warsaw University of Technology. The event is held, since several years, annually, during the last weekend of May. This year the Symposium was participated by over 200 participants, quite a number of them from the IEEE Region 8.

The Wilga Symposium created a specific form of appointing the Technical Program Committee. The permanent members are leaders of the patronage institutions. The changing members are senior representatives of technical universities and industrial laboratories from this country and IEEE R8, which are present at the Symposium

The Symposium is usually attended by quite a large groups of M.Sc. and Ph.D. students as well as young researchers from technical universities and corporate laboratories. These groups come frequently under the supervision of a senior research worker. Wilga Symposium is one of not very numerable meetings in the IEEE R8 totally designed for the young scientists and organized by young scientists and engineers, many of them members of the IEEE and SPIE. Wilga Symposium is an effective forum of exchange for research results and information on work conditions at different places in the IEEE R8. The students are interested in the similarities and differences in the curricula and

employment opportunities over the region. The Ph.D. students are seriously interested in the study subjects in the relevant fields of their colleagues from other universities in the IEEE R8. This knowledge facilitates considerably their work on the thesis. The Wilga Symposium facilitates exchange of personal information during the IEEE sponsored, informal, social meeting at the grill. The nice specialty of the local kitchen are extremely tasty Wilga cakes, specially fit a to semi-sweet Hungarian Tokay wine.

Not all of the standard research conferences enable such efficient meetings of young researchers. The financial problems are the basic cause. The young researcher problems are treated as marginal at many conferences. A lot of the communications of young researchers are presented only during the poster sessions. Wilga is quite different in this respect. All papers are presented orally in English with an obligatory discussion following the presentation. Frequently, hot discussions are continued during the coffee breaks. All the sessions are lead by young researchers, while the senior research staff work as judges. The presentations are judged by the colleagues, sometimes quite deeply, not only in respect of the research content but also of the graphical form. The presentations are sent to the organizers only in the electronic form and presented in this way. They are then distributed on the CDs or available on the web.

The fundamental assumption for the international Wilga Symposium is to keep the minimal costs for a young participant. The organizers offer full accommodation at a very competitive price. There is no conference fee at all. The second assumption is to keep the program level of the Symposium as high as possible. For the most of the participants, members of IEEE and SPIE the participation costs are close to zero, as it is comparatively easy to get the organizational support. No conference fee is possible, only when the event is organized wholly on the voluntary base. It has to be valued at a Symposium of this extent and size. The organization is facilitated by the fact that Wilga is nearly an ideal spot. The Warsaw University of Technology resort is located at the outlet of the Wilga River to the big Vistula River in the middle of the big pine forests. The accommodation conditions are modest but acceptable. The local food is very good. These conditions isolate the participants ideally from the influence of the external world. A good and cheap bus communications to/from Warsaw assures that the Symposium attracts numerable young researcher participation.

To assure the highest level of the Symposium the papers are selected first for the presentation and next for the publication. The papers submitted for the Symposium have to be recommended by the supervisors of the young researchers, symposium participants. After the presentation and discussion, the best papers are chosen for publication in the IEEE professional press. Usually the organizers publish a special edition of one of the local professional journals additionally to issuing a separate volume of well known series Proceeding of SPIE. Prior to the publication, the papers are peer reviewed. The announcements about the Wilga symposium are published in the IEEE and SPIE press as well as in the local professional journals.

The topical area of the symposium was initially confined to the photonics, optical communications and the optical Internet. With time, it was broadened to the advanced electronic systems, digital signal processing, mechatronics, automation, etc. Broadening of the scope was very favorable for the level of the contributions, especially from the Ph.D. students. The analysis methods used in quite different branches of the modern technology are sometimes analogous and it is possible to transfer efficiently the experience between the young researchers. The successive symposia receive more and more better contributions from the whole IEEE R8. The organizers consider edition of more than one volume of international proceedings next year.

The patronage of large international organizations like the IEEE and SPIE over the Wilga symposium is very important not only for the organizers but also for the individual participants. The mentioned organizations are represented, in this country, by their national Sections and Chapters. Both organizations the IEEE and SPIE have rich libraries in this country, accessible freely for the members. The libraries are located at the central technical library of Warsaw University of Technology. The IEEE and SPIE patronage assures international meaning of the Symposium. It is possible to publish the Symposium papers in the press of these organizations, which assures the worldwide access. The organizers try to make Wilga Symposium as an official event of IEEE and SPIE in this geographical region. Now Wilga is supported by the regional Student Activity Committees of the both institutes.

The WILGA Symposium is prepared in cooperation with the two large European physics institutes CERN in Geneva and DESY in Hamburg. The organizers of the Symposium cooperate closely with several research groups working at

a number of experiments there, including the Large Hadron Collider and the TESLA X-Ray FEL. The participants of the Symposium include members of these institutes and researchers from the international groups working in the field of advanced electronics and optoelectronics for high energy physics. This year Symposium has a special invited paper on TESLA accelerator and laser development authored by dr S.Simrock from the DESY institute.

The major topical subject of Wilga 2003 Symposium was photonics. The biggest centers presenting these subjects were Technical Universities in Warsaw, Białystok and Wrocław, Institute of Electron Technology and Military Academy of Technology in Warsaw. A group of papers concerned developments in the construction of the biggest world X-ray, free electron laser TESLA (DESY, Hamburg). These papers were in between such branches as mechatronics, advanced electronics, UV and RTG photonics. The photonics was also represented in the papers from the TU of Kielce (photonic materials), TU of Lublin (industrial applications) and TU of Gdansk (sensors). Some papers described particular photonic sub-systems applied in the industrial conditions.



The Warsaw ELHEP Team with the colleagues from DESY and Łódź University of Technology after success celebration of the FPGA based X-Ray FEL and TESLA cavity SIMCON. Dr Stefan Simrock, head of the TESLA LLRF Group, is sitting next to the editor of this volume. Dr S. Simrock was an invited speaker to the WILGA Symposium.

Traditionally, one of the major subjects of the Wilga Symposium is advanced electronics and photonics for high energy physics experiments. Apart from the TESLA, the current developments of two major world experiments are recorded. One is in the state of creation – the LHC and one of its detectors the CMS and the second – the HERA and ZEUS has been working for the last ten years. In case of the Backing Calorimeter (which is a part of ZEUS) a major upgrade of this detector has been undertaken very recently. During the shutdown of the HERA accelerator (dedicated to increase the luminosity of the collider which will significantly enhance its "discovery potential") the BAC detector was equipped with new trigger especially sensitive to muons. The diagnostic system of the detector was also substantially improved to monitor the performance of the detector and to provide the reliable trigger information.

The CMS is a large barrel like multi-detector consisting of several detection layers sensitive to different particles and energetic phenomena. A group of papers on the CMS concern electronic and photonic systems design for multi-

channel data readout, sorting and acquisition. The large CMS detector is just under construction and all of these moved topics are very hot.

The papers concerning the (optical) Internet touched such problems as: optical network architecture, modern protocols for optical networks, optical network reliability, QoS, etc. Other papers concerned; massive data acquisition systems, distance learning, data bases for WWW servers, hardware remote control over the Internet, etc. A separate session was organized with the aid of the Industrial Institute of Telecommunication in Warsaw about the DSP for industrial and military applications.

Other topical groups during the 2003 Wilga Symposium were: image recognition, optical mapping of 3D objects, electronics and photonic for astronomy and accelerator technology, laser technology, calculation grids, complex measurement systems and networks.

In order to further decrease the costs for the users and make the symposium more comfortable for the users the sessions were organized not according to the topics but the papers from particular TUs were gathered. It was customary for the TU groups to come to and leave the symposium together. Topical sessions will be created in the proceedings. Each topical session has a supervisor - a member of the patronage committee.

WILGA 2004 SYMPOSIUM

The organizers invite interested persons, member and non-members of the IEEE and SPIE institutes to participate actively in the IEEE-SPIE Symposium Wilga 2004. The Symposium is scheduled for 26-30 May 2004. More detailed information is available on the web under the following URL address <http://nms.ise.pw.edu.pl/wilga>.

Senior researchers are invited to bring along younger colleagues, organize topical or panel sessions and suggest invited papers. M.Sc. and Ph.D. students are invited to present the results of their research on theoretical and practical problems, which are subjects of their theses. The IEEE-SPIE Wilga Symposium is a magnificent place to test your ability to present ones own results and to defend the thesis in the fire of research discussion in an international environment. It is just the best way to begin the difficult way of gathering ones own achievements on a difficult but fascinating way of technical research. This start may be done under the magnificent wings of the professional international engineering organizations – the SPIE and the IEEE.

The XIVth IEEE-SPIE Symposium on Photonics and Web Engineering will take place in WILGA Village near Warsaw, a resort center owned by the Warsaw University of Technology, on 26-30 May 2004. The XIIIth Symposium will take place on 25 January 2004 in the Faculty of Electronics and Information Technology of WUT. The WILGA Symposium will gather around 200 specialists next year. The participants come from academia and research institutes – domestic and international.

The WILGA 2004 Symposium will be organized by: IEEE Poland Section – Student Branch, SPIE Poland Chapter, PERG and ELHEP Laboratories of Institute of Electronic Systems, WUT. The WILGA 2004 Symposium is organized under the auspices of: IEEE Poland Section and SPIE Poland Chapter, Institute of Electronic Systems, Warsaw University of Technology, Committee of Electronics and Telecommunications, Polish Academy of Sciences, Polish Optoelectronics Committee, Association of Polish Electrical Engineers, Inter-Association Committee of Informatics, Electronics and Telecommunications, SEP-SIMP. The WILGA 2004 Symposium Patronage Committee will also consist of persons leading the above-mentioned institutions, as during the previous meetings of this series.

The Symposium possesses each year a slightly different scope. The major topical emphasis in 2004 is work development on the biggest planned free electron laser (FEL). The broad area of the Symposium are advanced photonic and electronic systems in hardware and software aspects.

The WILGA 2004 Symposium will have the following topical Sessions:

- Optical Fiber Technology - multi-gigabit transmission systems and distributed multi-sensor hybrid telemetric networks; basics of optical networks; Optical Internet;
- Optoelectronics – materials, technologies and components; Lighting technology;
- Digital holography; Measurements and recognition of 3D objects;

- Advanced measurement systems for biomedicine and environment protection;
- Measurement and functional systems for high energy physics experiments and astronomy;
- Software and new functionalities of optical networks and the Internet;
- Global calculation networks – GRID;
- Organization of other topical sessions is not excluded, and depends on input from their organizers as well as on number and quality of submitted papers.

The Organizers of the topical sessions are renowned domestic and international experts in relevant branches of science and technology. Particular topical sessions are filled with papers invited by Session Organizers and by presentations submitted by young researchers, M.Sc. and Ph.D. students. The supervisors or tutors of young researchers should recommend the submitted papers.

The main aim of the WILGA 2004 Symposium is to build a nation wide debating forum for young researchers and Ph.D. students with strong participation of experts and young research fellows from abroad. Membership of young scientists in IEEE (students and GOLD members) and SPIE will be emphasized during a special Society Evening and IEEE B-B-Q Reception.

The Symposium publications are subject to a standardized peer reviewing process, as in archival journals, and are printed in renowned series Proceedings of SPIE (www.spie.org and www.spie.pl) in English language. Some papers are also published in Elektronika Monthly, a journal of Association of Polish Electrical Engineers. Elektronika is a medial patron of the Symposium. The official language of the Symposium is English. The presentations are allowed also in Polish, Russian and German.

The WILGA 2004 Symposium Organizers invite experts in relevant subject, embracing the widely understood Symposium scope, to declare organization of topical sessions.

The WILGA 2004 Symposium Organizers invite warmly students (Eng., M.Sc., Ph.D.), young researchers from academia, research institutions, innovative spin-offs and industry to submit papers and participate in WILGA meeting. WILGA is an unforgettable and irreplaceable experience for young people.

The WILGA 2004 Symposium Organizers invite high technology firms, spin-offs and all interested businesses to meet with around 200 young researchers, the best ones in the area of photonics applications, advanced electronics, optical communications, HEP experiments and optical Internet engineering.

All information about the Symposium, organization problems, session proposal, paper submission, participation questions are available only through electronic way under the address: photonics@ise.pw.edu.pl.

The Symposium participation costs are just minimal. There is no fee. The only costs are accommodation in WILGA WUT Resort Centre. These costs are estimated for 2003 to be 55 Polish Złoty per day, for night and three meals a day. That is around 14\$. The participants book the rooms in WILGA of their own, under the telephone number 0-prefix-25-685-30-17 (45,47). The information about the WILGA WUT Resort Centre is available on the web: <http://www.info1.pl/Noclegi/osrodki/mazowieckie/wilga/start.htm>



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