

Third Asia-Pacific Conference



**Fundamental problems of
opto – and microelectronics**

**ADVANCE
PROGRAM**

Vladivostok, Russia

September 8 - September 12, 2003

ORGANIZED BY

FAR EASTERN STATE TECHNICAL UNIVERSITY, Vladivostok, Russia.

President: Prof. G. P. Turmov.

INSTITUTE FOR AUTOMATION AND CONTROL PROCESSES. Far Eastern Division of Russian Academy of Science (RAS), Vladivostok, Russia.

Director: Academician of Russian Academy of Science, Prof. V. P. Miasnikov.

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President: Corresponding member of RAS, Prof. Yuri N. Kulchin.

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INSTITUTE FOR AUTOMATION AND CONTROL PROCESSES

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Academician of Russian Academy of Science, President of Institute for Automation and Control Processes of Far Eastern Division of RAS (IACP FED RAS), Vladivostok, Russia

Prof. Turmov G.P., Co-Chair

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27. Tanaka K., Canon Inc., Tokyo, Japan;
28. Tanaka S., National Def. Academy, Yokosuka, Japan;
29. Zavestovskaya I.N., Physics Institute of RAS, Moscow, Russia.

Program of APCOM'2003 VLADIVOSTOK

8 September 2003 (Monday)

15:00-17:30 Conference Registration Building "B" (Student Center)
17:30-19:30 Get Together Building "B" Building "B" (Student Center)

9 September 2003 (Tuesday)

08:30-09:30 Conference Registration Conference Hall (A-302)
10:00-10:45 Conference Opening Conference Hall (A-302)

SESSION. OPTICAL METHODS OF MEASUREMENT AND INFORMATION PROCESSING

SUBSESSION 1. *Optical beams transformation and processing*

CHAIR: Academician of RAS, Prof. O.N. Krokhin, Russia.

The session will be presented at Main Building ("A") Far Eastern State Technical University, A-307.

ORAL PRESENTATION

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|----|---|-----------------|
| 01 | GAUSSIAN BEAM ZOOM CONVERTER. | 11:00- |
| | Kazuo TANAKA (Technology Administration Headquarters, CANON Inc.) | 11:20 |
| 02 | NONSELECTIVE PHOTOREFRACTION LIGHT SCATTERING SIMULATION IN LINBO₃ CRYSTALS | 11:20-
11:40 |
| | Maksimenko V.A., Karpets Yu.M., Kovalev S.A., Stroganov V.I. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | |
| 03 | EXTRAORDINARY BEAMS IN ANISOTROPICAL CRYSTALS | 11:40-
12:00 |
| | Muriy A.A., Stroganov V.I. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | |
| | <i>Coffee break</i> | 12:00-
12:20 |

SUBSESSION 2. *Optical and electronic methods of light transformation and measurement*

CHAIR: Dr. Tanaka Kazuo, Japan.

The session will be presented at main building (“A”) far eastern state technical university, A-307.

ORAL PRESENTATION

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| 04 | TRANSFORMATION OF LASER LIGHT INTO ELECTRIC CURRENT. | 12:20-
12:40 |
| | Krokhin O.N. (Physics Institute RAS, Moscow, Russia) | |
| 05 | PARTICLE-SOLID INTERACTIONS: VARIATIONAL VERSUS PERTURBATIVE APPROACHES | 12:40-
13:00 |
| | V. U. Nazarov (Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan and Institute for Automation), S. Nishigaki (Kyushu Institute of Technology, Kitakyushu, Japan), J. M. Pitarke (Materia Kondentsatuaren Fisika Saila, Euskal Herriko Unibertsitatea, Basque Country, Spain, Donostia International Physics Center and Centro Mixto CSIC-UPV/EHU, Basque Country, Spain), and Y. Takada (Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan) | |
| 06 | THE MICROELECTRONICS LIFETIME ESTIMATION USING FUZZY LOGIC | 13:00-
13:20 |
| | N.N. Nomokonova, V.Y. Gavrilov (Vladivostok State University of Economics and Services, Russia) | |
| | <i>Lunch break</i> | 13:20-
15:00 |

SUBSESSION 3. *Holography and non-linear optical methods of information processing*

CHAIR: Dr. Zhou Zhi, China.

The session will be presented at main building (“A”) far eastern state technical university, A-307.

ORAL PRESENTATION

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| 07 | THE WAVEGUIDE COHERENT OPTICAL PROCESSOR | 15:00-
15:20 |
| | V.S. Feshchenko, A.N. Malov, E.A. Senokosov, O.A. Rogozhnikova. (Dniester State University, Tiraspol; Irkutsk State Technical University, Irkutsk.) | |
| 08 | THE MAGNETIC SENSITIVE GEL-COLLOIDAL HOLOGRAPHIC SYSTEM AS PERSPECTIVE OPERATING MEDIA FOR BIOCOMPUTER | 15:20-
15:40 |
| | A.N. Malov, A.E. Gafner, V.Yu. Molotcilo, M.O. Efimova, D.S. Plusnin (Irkutsk State Technical University, Irkutsk; Irkutsk State Teacher University, Irkutsk.) | |

10 September 2003 (Wednesday)

SUBSESSION 4. *Optical methods of measurement and information-measuring systems*

CHAIR: Prof. V.I. Stroganov, Russia.

The session will be presented at main building (“A”) far eastern state technical university, A-307.

ORAL PRESENTATION

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| 14 | WAVELET ANALYSIS OF THE NONLINEAR DYNAMICS FOR THE LASER MEDICAL TECHNOLOGIES
E.Ya. Gatkin, A.N. Malov, A.V. Neupokoeva, I.E. Golub, N.D. Strekochinskaya, L.V. Sorokina (Children’s Clinic No 9, Moscow; Irkutsk State Technical University, Irkutsk; Irkutsk State Medical University, Irkutsk.) | 9:00-
9:20 |
| 15 | FIBER OPTIC INCLINOMETER
Yu. N. Kulchin, O.B. Vitrik, A.V. Dyshluk (all authors are from Far Eastern State Technical University, Vladivostok, Russia) | 9:20-
9:40 |
| 16 | OPTOELECTRONIC INFORMATION-MEASURING SYSTEM FOR DYNAMIC DEFORMATION MEASURING
Yu. N. Kulchin, O.T. Kamenev, Yu.S. Petrov (all authors are from Far Eastern State Technical University, Vladivostok, Russia) | 9:40-
10:00 |
| 17 | CONCRETE CURING MONITORING BASED ON FBGS
Zhou Zhi (School of Civil Engineering Harbin Institute of Technology, Harbin, China) | 10:00-
10:20 |
| 18 | LOCAL MONITORING OF OFFSHORE PLATFORM TUBULAR JOINT BY FBGS
ZHAO Xuefeng (School of Civil Engineering Harbin Institute of Technology, Harbin, China) | 10:20-
10:40 |
| | <i>Coffee break</i> | 10:40-
11:00 |

SUBSESSION 4 (continuation). *Optical methods of measurement and information-measuring systems*

CHAIR: Prof. S. M. Shandarov, Russia.

The session will be presented at main building (“A”) far eastern state technical university, A-307.

ORAL PRESENTATION

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| 19 | STRAIN INTERFACE TRANSFERRING MECHANISM AND ERROR MODIFICATION OF FBG STRAIN SENSORS
Li Jilong (School of Civil Engineering Harbin Institute of Technology, Harbin, China) | 11:00-
11:20 |
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| 20 | PRINCIPLE OF OPERATION OF THE FIBER-OPTICAL MICROINFLECTION TEMPERATURE-SENSITIVE ELEMENT.
Yu.N.Kulchin, I. V. Denisov (FESTU), V.A. Sedov, R.S. Drozdov (Maritime State University), A.A. Gridin, V.V. Galafton (Far Eastern State University). | 11:20-11:40 |
| 21 | SPATIAL DISTRIBUTION RECONSTRUCTION OF THE SINGL INFLUENCES ON FIBER-OPTICAL MEASURING NETWORK.
Yu.N.Kulchin, I. V. Denisov (FESTU), E.V. Denisova (Far Eastern State University), N.A. Rybalchenko (Maritime State University). | 11:40-12:00 |
| 22 | COMPARATIVE ANALISIS OF THE SINGLS PROCESSING SYSTEMS PERFORMANCES OF THE DISTRIBUTED NETWORKS.
Yu.N. Kulchin, I. V. Denisov (FESTU), V.A. Sedov, R.S.Drozdov (Maritime State University). | 12:00-12:20 |

SUBSESSION 5. *Structures for optical methods of measurement and information processing*

Chair: Prof. O. B. Vitrik, Russia.

The session will be presented at main building (“A”) far eastern state technical university, A-307

ORAL PRESENTATION

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| 23 | OPTICAL AND PHOTOELECTRICAL PROPERTIES OF POLYVINYLALCOHOL (PVA)-ZNO/TIO₂
Prosanov I.Yu. (Far-East State University of Railway Communications, Khabarovsk) | 12:20-12:40 |
| 24 | PHYSICAL AND CHEMICAL PROPERTIES OF THE PHOTSENSITIVE COMPOSITIONS POLYMER – SEMICONDUCTOR
Prosanov I.Yu. (Far-East State University of Railway Communications, Khabarovsk) | 12:40-13:00 |
| <i>Lunch break</i> | | 13:00-15:00 |
| 25 | CONDITIONS OF SYNCHRONISM AT OPTICAL TRANSFORMATIONS
Krishtop V.V., Rapoport I.V., Tolstov E.V. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | 15:00-15:20 |
| 26 | EXPERIMENTAL SETUP FOR DEFINITION OF ELECTROOPTICAL FACTORS OF CRYSTALS
Karas K.I., Faleev D.S. (all authors are from Far-East State | 15:20-15:40 |

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| 27 | University of Railway Communications, Khabarovsk)
NONTRADITIONAL CONOSCOPICAL FIGURES
Karpets Yu.M., Bortulev S.N., Tolkunova T.K. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | 15:40-
16:00 |
| 28 | BEAMS SHIFT DUE TO FOUR-REFLECTION
Prokopovich M. R., Smyshlyaeva M.M. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | 16:00-
16:20 |
| 29 | OPTICAL ACTIVITY IN PARA-TELLURITE CRYSTALS
Rudoy K.A., Pikul O. Yu. (all authors are from Far-East State University of Railway Communications, Khabarovsk) | 16:20-
16:40 |
| 30 | PARAMETRIC INTERACTION OF SRS COMPONENTS IN DISSIPATIVE MEDIA
R. Kazumova (Physics Department, Baku State University, Azerbaijan) | 16:40-
17:00 |

EVENING EVENTS

19:00-21:00 BANQUET

11 September (Thursday)

10:00 – 11:00 FINAL CEREMONY OF THE CONFERENCE

11:30 -19:00 CULTURAL PROGRAM