

7th Asia-Pacific Conference on Fundamental Problems of Opto- and Microelectronics



WORKSHOP
September 15-18, 2007
Vladivostok, Russia

**ADVANCE
PROGRAM**

ORGANIZED BY

INSTITUTE FOR AUTOMATION AND CONTROL PROCESSES of Far Eastern Branch of Russian Academy of Sciences (IACP FEB RAS),
Vladivostok, Russia.

Director: Corresponding member of RAS Yu. N. Kulchin

PRESIDIUM OF FAR-EASTERN BRANCH OF RUSSIAN ACADEMY OF SCIENCES, Vladivostok, Russia.

President: Academician of RAS V.I.Sergienko

UNITED PHYSICS SOCIETY OF RUSSIA, PRIMORYE BRANCH

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

SPONSORED BY

RUSSIAN FOUNDATION FOR BASIC RESEARCH

Moscow, Russia.

FAR EASTERN BRANCH OF RAS

Vladivostok, Russia.

INSTITUTE FOR AUTOMATION AND CONTROL PROCESSES OF FEB RAS

Vladivostok, Russia.

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academician of Russian Academy of Science (RAS)
President of Physics Institute of RAS, Moscow, Russia

Prof. Yuri N. Kulchin, Co-chair
corresponding member of RAS,
president of Institute for Automation and Control Processes FEB RAS
vice-president of Far Eastern Branch of RAS (FEB RAS), Vladivostok, Russia

Prof. Jingping Ou, Co-chair
academician, president of Dalian Institute
of Technology, Dalian, P.R. of China

CONFERENCE COORDINATOR

Prof. Oleg B. Vitrik,
Head of Physics Department of Far Eastern National
Technical University (FENTU), principal researcher of
IACP FEB RAS, Vladivostok, Russia

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18. Pashinin P.P., Inst. General Phys. RAS, Moscow, Russia;
19. Sato Heihachi., National Defense Academy, Yokosuka, Japan;
20. Shalagin A.M., Institute of automation and electromeasurements, Siberian Division of RAS, Russia
21. Shandarov S.M., State Univ. of Control Systems and Radioelectronics, Tomsk, Russia;
22. Stroganov V.I., Far Eastern State Transport University, Khabarovsk, Russia;
23. Vitrik O.B., Far Eastern State Technical Univ (FESTU), Vladivostok, Russia,
24. Zvestovskaya I.N., Physics Institute RAS, Moscow, Russia;
25. Zhao Hong, Harbin Univ. of Science and Technology, Harbin, China.
26. Zhou Zhi, Harbin Institute of Technology, Harbin, China

PROGRAM OF APCOM'2007

15 September 2007 (Saturday)

Arrival and accommodation of APCOM'2007 participants.

16 September 2007 (Sunday)

14:00 - 16:00 Conference Registration

Lobby of Institute for Automation
and Control Processes FEB RAS
(5, Radio Str.)

16:00 - 17:30 Excursion around the Institute
for Automation and Control Processes IACP
FEB RAS.

Institute for Automation and
Control Processes FEB RAS
(5, Radio Str.)

18:00 – 20:00 Get together

Banquet room of Institute for
Automation and Control Processes
FEB RAS (5, Radio Str.)

17 September 2007 (Monday)

9:30 – 10:00

Late registrations

Conference hall of Presidium of
Far-Eastern Branch of RAS
(22, Svetlanskaya Str.)

10:00 – 10:20

Opening Ceremony

Conference hall of Presidium of
Far-Eastern Branch of RAS
(22, Svetlanskaya Str.)

ORAL PRESENTATIONS

Conference hall of Presidium of FEB RAS

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|---|--|-----------------|
| 1 | LASER SOUNDING OF AEROSOL AND OSON STRATA OF STRATOSPHERE IN SIBERIAN LIDAR OBSERVATORY
(invited lecture)
V.V. Zuev (Institute of Atmospheric Optics SB RAS, Tomsk, Russia) | 10:20-
10:35 |
| 2 | WAVE FORM AND FLUCTUATION OF PLETHYSMOGRAM MEASURED BY PHOTO INTERRUPTER
Toshihiro Shimizu (Graduate school of engineering, Kokushikan university, Tokyo, Japan) | 10:35-
10:50 |
| 3 | ENHANCED DIP-COATING OF ER ³⁺ -YB ³⁺ CODOPED AL ₂ O ₃ THIN FILMS ON SiO ₂ /SI(110) FORMED BY A POLYVINYLPIRROLIDONE ASSISTED NON-AQUEOUS SOL-GEL METHOD
Z.H. Zhu, S.Y. Zhang, M.K. Lei (Dalian University of Technology, Dalian, China) | 10:50-
11:05 |
| 4 | RESEARCH AND DEVELOPMENT OF A NOVEL FBG-BASED OSMOMETER
Zhi Zhou, Jun He, Jinping Ou (School of Civil Engineering, Harbin Institute of Technology, Harbin, China) | 11:05-
11:20 |
| 5 | AN OPTICAL RESONANT CHEMICAL MICROSENSOR BY USING NOBLE SILICON MICROMACHINING TECHNIQUE
Jacheon Han (Dept. of electronic engineering, Kangnam university, Korea) | 11:20-
11:35 |
| 6 | DYNAMICS OF LIGHT-INDUCED ABSORPTION IN BISMUTH TITANATE OXIDE CRYSTALS
S.M. Shandaroy, A.E. Mandel, M.G. Kisteneva, V.I. Itkin, S.V. Shlikov (Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia) | 11:35-
11:50 |
| | <i>Coffee break</i> | 11:50-
12:10 |

ORAL PRESENTATIONS

(continuation)

- 7 MEASUREMENT FOR GAS TEMPERATURE USING UV SPECTRA IN COMBUSTION STRONGLY INFLUENCED BY WALL RADIATION 12:10-12:25
Ken Kishimoto (School of Science and Engineering, Kokushikan University, Tokyo, Japan)
- 8 COMBINED TIME AND WAVELENGTH MULTIPLEXING OF FIBER BRAGG GRATINGS USING OPTICAL TIME DOMAIN REFLECTOMETER AND FIBER OPTIC CIRCULATOR 12:25-12:40
Yuri N. Kulchin, Oleg B. Vitrik, Anton V. Dvshlyuk, Anatoliy M. Shalagin, Sergey A. Babin, Alexander A. Vlasov, Ivan S. Shelemba (Institute for Automation and Control Processes FEB RAS)
- 9 LIGHT-INDUCED CHANGES IN THE SPECTRUM OF OPTICAL ABSORPTION IN Bi₁₂TiO₂₀:Cd CRYSTAL 12:40-12:55
A.Akrestina, F. Morini, S. Shandarov, M Kisteneva, A. Vishnev, R. Kiselyov, S. Smirnov, Yu. Kargin (State University of Control Systems and Radioelectronics, Tomsk Russia)
- 10 TUNABLE ERBIUM-DOPED FIBER LASER FOR INTERROGATION OF FIBER BRAGG GRATING SENSORS 12:55-13:10
S.A. Babin, I.S. Shelemba, A.A. Vlasov (Institute of Automation and Electrometry, Novosibirsk, Russia)
- 11 FABRICATION AND CHARACTERIZATION OF SILICON MICROMACHINED FABRY-PEROT CAVITY MICROSYSTEMS FOR SIGNAL SENSING AND TUNING APPLICATIONS 13:10-13:25
Jaehoon Han (Department of Electronic Engineering, Kangnam University, Korea)
- 12 UNDERSTANDING OF SENIOR'S BEHAVIOR THROUGH A PHOTSENSOR 13:25-13:40
Seung Ho Cho (Division of Computer & Media Eng. Kangnam University, Yongin, Republic of Korea)
- 13 OPTICAL BISTABILITY IN A SINGLE COUPLER FIBER RING RESONATOR 13:40-13:55
Jinbiao Liu, Chunfei Li and Junqing Li (Department of Physics, Harbin Institute of Technology, Harbin, China)
- Lunch break*** 14:00-15:00
- 14 RECONSTRUCTION OF DISTRIBUTED PHYSICAL FIELDS IN INTEGRATING MEASURING SYSTEMS 15:00-15:15
B.Notkin, Yu.N. Kulchin, A.Yu. Kim (Institute for Automation and Control Processes FEB RAS)

15	THE PREDICTION METHOD OF TIME SERIES AND ITS APPLICATION TO PLETHYSMOGRAM <u>Takeshi Chikano, Toshihiro Shimizu</u> (Graduate School of Engineering, Kokushikan University, Tokyo, Japan)	15:15- 15:30
16	POLARIZING CHARACTERISTICS OF RADIATION GONE THROUGH THE CRYSTAL PLATE <u>Alexandr V. Syuy, Natalay A. Kravtsova, Vladimir V. Stroganov</u> (Far Eastern State Transport University, Khabarovsk, Russia)	15:30- 15:45
17	TYPE MATCHING PROPAGATION FOR SELECTIVE THINKING CHAIN EXTRACTION <u>JeongYon Shim</u> (Div. of General Studies, Computer Science, Kangnam University, Korea)	15:45- 16:00
18	A NOVEL DEMODULATION TECHNIQUE FOR FIBER SENSOR BY USE OF SWEPT FIBER LASER BISTABLE DEVICE <u>Lu Guohui, OU Jinping, Zhou Zhi</u> (School of Civil Engineering, Harbin Institute of Technology)	16:00- 16:15
19	1D/2D PHOTONIC CRYSTALS FILLED WITH CHIRAL MEDIA - BANDGAP STRUCTURE DESIGN AND THEIR APPLICATION IN DEVICES <u>Junqing Li, Lei Jin, Hongming Li, Quanfen Lin, and Chunfei Li</u> (Physics Department, Harbin Institute of Technology, Harbin, China)	16:15- 16:30
20	REGULATING OF RADIATION DEFECTS IN ALKALI-HALOIDE CRYSTALS <u>Rokosev V.A., Vanina E.A.</u> (Amur State University, Blagoveshchensk, Russia)	16:30- 16:45

18:00 – 21:00 Banquet

18 September 2007 (Tuesday)

ORAL PRESENTATIONS

Conference hall of Presidium of FEB RAS

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| 21 | ANALYTICAL SOLUTION FOR SOME PROBLEMS OF FOUR-BEAM-SPLITTING
V. A. Kuznetsov, P. A. Menshikov, D. S. Faleev (Far-Eastern State Transportation University, Khabarovsk, Russia) | 10:00-
10:15 |
| 22 | FIBER OPTICAL SYSTEM FOR DEFORMATION MEASUREMENT OF LARGE-SCALE OBJECTS
Yu.N. Kulchin, O.T.Kamenev, Yu.S.Petrov (Institute for Automation & Control Processes FEB RAS, Vladivostok, Russia). | 10:15-
10:30 |
| 23 | REFLECTION HOLOGRAMS MULTIPLEXING IN PHOTOREFRACTIVE CRYSTAL OF CUBIC SYMMETRY
R.V.Romashko, Yu.N.Kulchin, A.A.Kamshilin (Institute for Automation & Control Processes FEB RAS, Vladivostok, Russia). | 10:30-
10:45 |
| 24 | ELECTRONIC CORRELATION METHOD OF PROCESSING OF THE SIGNALS OF THE SINGLE-FIBER INTERMODE INTERFEROMETER WITH A SMALL NUMBER OF EXCITED MODES
Yu.N.Kulchin, O.B.Vitrik, A.D.Lantsov (The International Joint Laboratory of optical techniques for structural health monitoring, IACP FEB RAS, Vladivostok, Russia) | 10:45-
11:00 |
| 25 | RECONSTRUCTION OF POINT IMPACTS BY DISTRIBUTED FIBER-OPTIC NETWORK USING A PRIORI INFORMATION
Denisova E.V., Fadeev V.V. (Far Eastern State University, Vladivostok, Russia) | 11:00-
11:15 |

11:15 – 12:00

Summing up the results of the Workshop;
Closing Ceremony

**Conference hall of
Presidium of FEB RAS
(22, Svetlanskaya Str.)**

13:00 – 19:00

APCOM'2007 leisure activities

19 September 2007 (Wednesday)

Departure of APCOM'2007 participants