

**Asia-Pacific Conference on
Fundamental Problems of Opto- and
Microelectronics**



W O R K S H O P
Vladivostok, Russia
September, 14 – 17,
2009

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.

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Vladivostok, Russia.

INSTITUTE FOR AUTOMATION AND CONTROL PROCESSES OF FEB RAS

Vladivostok, Russia.

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26. Zheltikov A.M., Russian Foundation for Basic Research, Moscow, Russia;
27. Zhou Zhi, Harbin Institute of Technology, Harbin, China.

PROGRAM OF APCOM'2009

September 14 (Monday)

17:00 – 19:00 Conference Registration

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

19:00 – 21:00 Get together

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

September 15 (Tuesday)

8:00 – 9:00
Late registrations

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

09:00 – 9:30
Opening Ceremony

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

ORAL PRESENTATIONS

Conference hall of Presidium of Far-Eastern Branch of RAS

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|---|---|-----------------|
| 1 | PRODUCTION OF THE METAL SURFACE MICRO- AND NANOSTRUCTURES UNDER ULTRASHORT LASER PULSES ACTION
<u>Irina N. Zavestovskaya</u> (P.N. Lebedev Physical Institute of Russian Academy of Science, Moscow, Russia) | 09:30-
09:45 |
| 2 | STUDY OF THE BALANCE IN AUTONOMIC NERVOUS SYSTEM BY USING THE PHOTO INTERRUPTER
<u>Toshihiro Shimizu</u>, <u>Makoto Kozaki</u> (Faculty of Health and Medical Engineering, School of Science and Engineering, Kokushikan University, Tokyo, Japan) | 09:45-
10:00 |
| 3 | NONLINEAR EFFECTS IN PERIODICALLY-POLED Y-CUT LITHIUM NIOBATE WAVEGUIDES AND SUBSTRATES
<u>L.S. Kokhanchik</u>, <u>M.V. Borodin</u>, <u>N.I. Burimov</u>, <u>S.M. Shandarov</u>, <u>V.V. Shcherbina</u>, and <u>T.R. Volk</u> (State University of Control System and Radioelectronics) | 10:00-
10:15 |
| 4 | AN EXPERIMENTAL STUDY ON BEHAVIORAL PATTERNS IN A BEDROOM USING A WIRELES S SENSOR NETWORK
<u>Seungho Cho</u> and <u>Bonghee Moon</u> (Division of Computer & Media Information Engineering, Kangnam University, Republic of Korea) | 10:15-
10:30 |
| | <i>Coffee break</i> | 10:30-
10:50 |
| 5 | THE LIGHT-OXYGEN EFFECT AND BIOTECHNOLOGY
<u>A.N. Starodub</u> and <u>S.D. Zakharov</u> (P.N. Lebedev Physical Institute of the RAS, Moscow, Russia) | 10:50-
11:05 |
| 6 | COMPENSATION OF LOW ORDER ABERRATIONS WITH LIQUID CRYSTAL CORRECTORS
<u>S.P. Kotova</u>, <u>V.V. Patlan</u>, <u>S.A.Samagin</u>, <u>O.A. Zayakin</u> (P.N. Lebedev Physical Institute, Samara Branch, Samara, Russia) | 11:05-
11:20 |

13:00 – 19:00
Sea Excursion “Russky Island”, lunch included.

September 16 (Wednesday)

ORAL PRESENTATIONS

Conference hall of Presidium of FEB RAS

7	MEASUREMENTS OF POWER LINE PHASES Sugoog Shon (University of Suwon, Department of Information and Telecommunication, Seoul, Korea)	09:00-09:15
8	LIDAR STATION BASED ON EXCIMER AND SOLID STATE LASERS FOR INVESTIGATIONS OF THE ATMOSPHERE Shmirko K.A., Pavlov A.N., Bukin O.A., Stolyarchuk S.Yu. (Institute for automation and control processes FEB RAS)	09:15-09:30
9	3D INTERCONNECTION USING TSV (THROUGH-SI-VIA) TECHNOLOGY Gu-Sung Kim (Department of Electronic Engineering, Kangnam University, Republic of Korea)	09:30-09:45
10	CIS-LINET NETWORK OBSERVATIONS OF THE STRATOSPHERE AEROSOLS DURING 2008-2009 K. A. Shmirko, O. A. Bukin, A. N. Pavlov, S. Yu. Stolyarchuk, V. V. Zuev, Yu. S. Balin, V. D. Burlakov, S. I. Dolgii, A. V. Nevzorov, A. P. Chaikovskii, V. P. Kabashnikov, F. P. Osipenko, I. E. Penner, S. V. Samoilova (Institute of Automatics and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	09:45-10:00
11	TAILORING THE SOLITON DYNAMICS OF ULTRASHORT PULSES IN PHOTONIC-CRYSTAL FIBERS A.M.Zheltikov (International Laser Center, Moscow State University, Moscow, Russia)	10:00-10:15
12	LASER NANOCLUSTERIZATION OF GASOLINES A.N.Malov, A.V. Neupokoeva, A.N.Borodin (Irkutsk Higher Air Force Engineering School (Military Institute), Irkutsk, Russia)	10:15-10:30
	Coffee break	10:30-10:50
13	FIBER-OPTIC SPECTROMETER BASED ON THE METHOD OF LASER-INDUCED FLUORESCENCE Yuri N. Kulchin, Sergey S. Voznesenskiy, Evgeniy L. Gamayunov, Alexei A. Korotenko, Galina L. Berezkina (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	10:50-11:05
14	IMPROVEMENT OF REMOTE USER AUTHENTICATION SCHEME WITH SMART CARDS YoungHwa An (Department of Computer and Media Information Engineering, Kangnam University, Republic of Korea)	11:05-11:20
15	SPECTRAL AND SPATIAL PROPERTIES OF SUPERCONTINUUM GENERATED IN BIOSILICATE NANOCOMPOSITES Kulchin Yu.N., Bukin O.A., Bezverbny A.V., Golik S.S., Nagorniy I.G., Proshenko D.Yu., Chechlenok A.A., Sokolova E.B. (Institute for Automation and Control Processes, Far Eastern Branch, Russian Academy of Sciences, Vladivostok, Russia)	11:20-11:35

16	SPECTRALLY-BASED PRINCIPLE OF NEAR-FIELD OPTICAL MICROSCOPY USING FIBER OPTIC FABRI-PEROT MICRORESONATOR Yu.N. Kulchin, O.B. Vitrik, A.V. Dyshlyuk, A. Kuchmizhak (Institute of Automation and Control Process, Far Eastern Branch of RAS, Vladivostok, Russia)	11:35- 11:50
17	BENDING MEASUREMENT TECHNIQUE BASED ON OPTICAL FIBER WAVEGUIDE WITH LOW NORMALIZED FREQUENCY Yu.N. Kulchin, O.B. Vitrik, A.V. Dyshlyuk, S.O. Gurbatov (Institute of Automation and Control Process, Far Eastern Branch of RAS, Vladivostok, Russia)	11:50- 12:05
18	INTEGRATION APPROACH OF QUALITY MANAGEMENT METHODOLOGIES FOR MANAGEMENT INNOVATION Young H. Park (Department of Industrial and System Eng., Kangnam University, Korea)	12:05- 12:20
19	POLARIZATION-INDEPENDENT PHASE DEMODULATION TECHNIQUE BASED ON ORTHOGONAL WAVE MIXING IN PHOTOREFRACTIVE CRYSTAL R.Romashko, Y.Kulchin, S. Di Girolamo, A.Kamshilin (Institute of Automation and Control Process, Far Eastern Branch of RAS, Vladivostok, Russia)	12:20- 12:35
	Lunch break	12:40- 13:40
20	THE INFLUENCE OF DIELECTRIC NANOPARTICLE'S SHAPE ON THE ENERGY SPECTRUM OF QUANTUM-DIMENSIONAL STATES OF CHARGE CARRIERS V. P. Dzyuba, I.V.Dzyuba, Yu.N. Kulchin (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	13:40- 13:55
21	GENERAL CONCEPTS OF INTELLIGENT FIBER-OPTICS SYSTEM OF PERIMETER DEFENSE Yu. N. Kulchin, Boris S. Notkin and Alexandra Yu. Kim (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	13:55- 14:10
22	PECULIARITIES OF OPTICAL ABSORPTION IN DOPED LINBO ₃ CRYSTALS V.A. Maksimenko, Yu. M. Karpets, I.N. Levkovskiy, A.V. Grusha (Far Eastern State Transport University, Khabarovsk, Russia)	14:10- 14:25
23	POLARISING PROPERTIES OF CRYSTAL PLATE MGF2 G.V.Kulikova, O.J.Pikul, P.S.Andreev (Far East State Transport University, Khabarovsk, Russia)	14:25- 14:40
24	DIFFERENTIAL TECHNIQUE FOR FBG INTERROGATION AND MULTIPLEXING USING OTDR Yu.N. Kulchin, O.B. Vitrik, A.V. Dyshlyuk (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	14:40- 14:55
	Coffee break	14:55- 15:15

25	THE MODEL OF THE NONLINEAR PART OF REFRACTION INDEX OF AN ENSEMBLE OF DIELECTRIC NANOPARTICLES V. P. Dzyuba, A. E. Krasnok, Yu. N. Kulchin (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	15:15- 15:30
26	FIBER-OPTICAL DEFORMOGRAPH ON THE BASIS OF THE MACH-ZENDER INTERFEROMETER Yu.N. Kulchin, O.T. Kamenev, Yu.S. Petrov (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	15:30- 15:45
27	ARTIFACTS SUPPRESSION IN LIMITED DATA PROBLEM FOR PARALLEL FIBER OPTICAL MEASURING SYSTEMS Yu. N. Kulchin, E. V. Zakasovskaya (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	15:45- 16:00
28	NONLINEAR REFRACTIVE INDEX OF SYSTEM OF INTERACTING NANOPARTICLES Andrey V. Panov (Institute of Automation and Control Processes, Far East Division, Russian Academy of Sciences, Vladivostok, Russia)	16:00- 16:15

18:00 – 21:00

APCOM'2009 Banquet

September 17 (Thursday)

9:00 – 10:00

Summing up the results of the
workshop and closing ceremony

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

Departure of APCOM'2009 participants