

**PROGRAMME of
The International WORKSHOP
on
OPTOELECTRONIC PHYSICS AND TECHNOLOGY
June 20-22, 2007 Kharkov, Ukraine**

http://photonics.kture.kharkov.ua/OPT/OPTann1_en.html

June 20

Opening 10:00 – 10:20
Session I 10:20 - 11:40
Chair Prof. I. A. Sukhoivanov

10:20 - 11:00 (inv.)

RECENT ADVANCES OF VCSEL TECHNOLOGY AT GIST

Y. T. Lee¹, K. S. Chang¹, Y. M. Song¹, and V. V. Lysak^{1,2}

¹ *Gwangju Institute of Science and Technology, Republic of Korea*

² *Kharkov National University of Radio Electronics, Ukraine*

11:00 – 11:40 (inv.)

**HIGHLY EFFICIENT RESONANT-CAVITY LIGHT-EMITTING DIODES FOR
COMPACT COLOR PROJECTORS**

V. V. Lysak^{1,2}, Y. T. Lee¹

¹ *Gwangju Institute of Science and Technology, Republic of Korea*

² *Kharkov National University of Radio Electronics, Ukraine*

Break: 11:40 – 12:00

Session II 12:00 – 13:00

Chair Prof. Valerii K. Kononenko

12:00 – 12:20

EFFECTIVE-MASS SUPERLATTICES AS BALLISTIC TRANSPORT ELEMENTS

M.V. Klymenko¹, I.M. Safonov^{1,2}, O. V. Shulika¹, I. A. Sukhoivanov¹, R. Michalzik²

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *University Ulm, Germany*

12:20 – 12:40

**IMPACT OF POSITION-DEPENDENT EFFECTIVE MASS ON GAIN IN QUANTUM-
CASCADE LASER**

M.V.Klymenko¹, M.F.Pereira², I.M.Safonov^{1,3}, O.V.Shulika¹, I.A.Sukhoivanov¹

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Sheffield Hallam University, UK*

³ *University Ulm, Germany*

⁴ *FIMEE, University of Guanajuato, Mexico*

12:40 – 13:00

**SIMULATION OF ACTIVE REGIONS OF SEMICONDUCTOR LASERS AND OPTICAL
AMPLIFIERS BASED ON QUANTUM WELLS**

O.V.Shulika

Kharkov National University of Radio Electronics, Ukraine

Lunch 13:00 – 14:00

Session III 14:00 – 16:00

Chair Prof. Y. T. Lee

14:00 – 14:40 (inv.)

NOVEL OPTOELECTRONIC ELEMENTS BASED ON ASYMMETRIC MULTIPLE-QUANTUM-WELL HETEROSTRUCTURES

V. K. Kononenko

Stepanov Institute of Physics, National Academy of Sciences of Belarus, Belarus

14:40 – 15:20 (inv.)

ELECTRONIC AND OPTICAL PROPERTIES ON NON-POLAR INGAN/GAN QUANTUM-WELL STRUCTURES

S. H. Park¹, D. Kim¹, H. M. Kim¹, and Y. T. Lee²

¹ *Catholic University of Daegu, Hayang, Kyongsan, Republic of Korea*

² *Gwangju Institute of Science and Technology, Republic of Korea*

15:20 – 15:40

MODELING, ANALYSIS AND OPTIMIZATION OF CHIRPED MIRRORS

S. Yakushev¹, O.V. Shulika¹, V.V. Lysak^{1,2}

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Gwangju Institute of Science and Technology, Republic of Korea*

15:40 – 16:00

THEORETICAL STUDY OF THE QUANTUM EFFICIENCY OF INGAAS/GAAS RESONANT CAVITY ENHANCED PHOTODETECTORS

S. V. Gryshchenko¹, A. A. Dyomin¹, V. V. Lysak^{1,2}

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Gwangju Institute of Science and Technology, Republic of Korea*

16:10 – Welcome Party

June 21

Session IV 10:00 – 12:00

Chair Prof. Yu. P. Machekhin

10:00 – 10:40 (inv.)

OPTICAL LOGIC GATE “AND”, CONTROLLABLE PHOTON CRYSTAL

Igor V. Dzedolik

Taurida V. Vernadsky National University, Ukraine

10:40 – 11:20 (inv.)

NEW TRENDS IN AQUEOUS ELECTROGENERATED CHEMILUMINESCENCE

Yu. T. Zholudov, M. M. Rozhitskii

Kharkov National University of Radio Electronics, Ukraine

11:20 – 11:40

THEORETICAL STUDY OF OPTICAL PROCESSES IN NONLINEAR PHOTONIC CRYSTALS DEVICES

I.V. Guryev¹, I.A.Suhoivanov^{1,2}, E. Alvarado Mendez², R. Rojas-Laguna², J. Estudillo Ayala², J.A. Andrade Lucio²

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *FIMEE, University of Guanajuato, Mexico*

11:40 – 12:00

EXPERIMENTAL MODELING OF MAGNETOPHOTONIC CRYSTALS IN GIGAHERTZ FREQUENCY BAND

S.V. Chernovtsev^{1,2} and S.I. Tarapov^{1,2}

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Usikov Institute of Radiophysics and Electronics of National Academy of Sciences of Ukraine, Ukraine*

Break: 12:00 - 12:20

Session V 12:20 – 13:50

Chair Prof. S. H. Park

12:20 – 12:50

EDUCATION AND SIMULATION WITH LASERCAD III

M.V. Klymenko, O.V.Shulika, I.M. Safonov

Kharkov National University of Radio Electronics, Ukraine

12:50 – 13:10

TWO-DIMENSIONAL SIMULATION OF SEMICONDUCTOR LASERS AND SEMICONDUCTOR OPTICAL AMPLIFIERS USING ATLAS

O.V.Shulika¹, W. Freude², Leuthold²

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Institute of High-Frequency and Quantum Electronics, Karlsruhe, Germany*

13:10 – 13:50

(tentative inv.)

INTERSUBBAND ANTIPOLARITON: A NEW SOLID STATE QUASI PARTICLE

Mauro Pereira

Sheffield Hallam University, UK

Lunch 13:50 – 15:00

Session VI 15:00 – 17:00

Chair Prof. M.M. Rozhitskii

15:00 – 15:20

AUTOMATIZATION OF THE CONTROL TECHNOLOGICAL PROCESSES OF OPTICAL FIBER COMPONENTS PARAMETERS

A. Filipenko, I. Nevludov, O. Sicheva

Kharkov National University of Radio Electronics, Ukraine

15:20 – 15:40

PASSIVE FIBER-OPTICAL COMPONENTS BASED ON THE PHOTONIC CRYSTALS

A.V. Dyogtyev¹, R. DeLaRue², I.A. Sukhoivanov¹

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *University of Glasgow, UK*

15:40 – 16:00

MODELING OF 1-D PHOTONIC BANDGAP MICROSTRIP STRUCTURES

V.I. Fesenko, G.V. Tkachenko

Kharkov National University of Radio Electronics, Ukraine

16:00 – 16:20

EFFECTS OF D.C. ELECTRIC FIELDS DISPERSIONS OF CARBON NANOTUBES IN NEMATIC LIQUID CRYSTALS UNDER D.C. ELECTRIC FIELDS

M.P.Kukhtin, A.I.Kocherzhin, V.D.Panikarskaya, S.S.Minenko, A.P.Fedoryako, A.G.Nerukh, L.N.Lisetski

Kharkov National University of Radio Electronics, Ukraine

16:20 – 16:40

MACROPOROUS SILICON INFILTRATED WITH LIQUID CRYSTALS: DIRECTOR-FIELD CONFIGURATION AND DEVICE APPLICATIONS

A.A. Dyomin¹, G.V. Tkachenko¹, V. Tkachenko², I.A. Sukhoivanov^{1,3}, G. Abbate²

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *University of Naples Federico II, Italy*

³ *FIMEE, University of Guanajuato, Mexico*

16:40 – 17:00

TO THE QUESTION OF QUANTUM CRYPTOGRAPHY TRANSMISSION SYSTEM WITH POLARIZED CODING

R. I. Tsekhmistro, A. N. Kostuk

Kharkov National University of Radio Electronics, Ukraine

June 22

Session VII 9:00 – 10:20

Chair Prof. S.I. Tarapov

9:00 – 9:20

EFFICIENT GAIN COMPUTATION FOR SEMICONDUCTOR QUANTUM-WELLS AND QUANTUM-DOTS

M. V. Klymenko

Kharkov National University of Radio Electronics, Ukraine

9:20 – 9:40

POSSIBILITY OF TEMPERATURE REGIME EXPANSION IN NEAR- AND MID-IR MQW LASERS

O. V. Mashoshyna¹, A. Joullie²

¹ *Kharkov National University of Radio Electronics, Ukraine*

² *Lab. CEM2 University Montpellier, France*

9:40 – 10:00

LASER DYES. QUEST AND DEVELOPMENT IN IRE NASU

V. V. Maslov

Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine (IRE NASU), Ukraine

10:00 – 10:20

LASER-INDUCED BREAKDOWN SPECTROSCOPY FOR QUANTITATIVE MEASUREMENT OF METALS ALLOYS COMPONENTS.

M. I. Dzubenko, Kolpakov S.N., Kulishenko D.F., Priyomko A.A.

Usikov Institute of Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU), Ukraine

Break: 10:20 - 10:40

Session VIII 10:40 – 12:00

Chair Dr. V.V.Lysak

10:40 – 11:00

NANOIMPRINTING – NANOLITHOGRAPHY

V. A. Palagin

Kharkov National University of Radio Electronics, Ukraine

11:00 – 11:20

THE EXPERIENCE OF THE STC “THERMOCONTROL” IN THE FIELD OF THERMAL NON-DESTRUCTIVE TESTING AND THERMOGRAPHY

V. Storozhenko, S. Meshkov, S. Malik

Kharkov National University of Radio Electronics, Ukraine

11:20 – 11:40

APPLICATION OF THE DIGITAL HOLOGRAPHIC INTERFERENCE MICROSCOPE FOR THIN FILMS INVESTIGATION

D.N.Tishko, T.V.Tishko, V.P.Titar, Y. I. Zadneprovskiy, A.S Kuprin, I.V.Zgoda

V.Karazin Kharkov National University, Ukraine

11:40 – 12:00

A NEW APPROACH TO POLARIZATION HOLOGRAM REGISTRATION

V.P.Titar, O.V.Spachenko, A.M.Naboka

V.Karazin Kharkov National University, Ukraine

12:00 Closing party