

Contents

Volume 4453 Materials and Devices for Photonic Circuits II

PHOTONIC BANDGAP DEVICES
OPTICAL DEVICES I
OPTICAL DEVICES II
OPTICAL DEVICES III
PHOTONIC MATERIALS AND TECHNOLOGIES
BIOLOGICAL AND QUANTUM COMPUTING
POSTER SESSION

Volume 4454 Materials for Infrared Detectors

INFRARED DETECTORS FOR SPACE APPLICATIONS
MULTICOLOR INFRARED DETECTORS
MBE HGCDTE MATERIAL AND DETECTORS
QUANTUM WELL INFRARED DETECTORS
INFRARED MATERIAL AND DEVICE PHYSICS
UNCOOLED AND HIGH-OPERATING TEMPERATURE DETECTORS
AVALANCHE PHOTODIODES
POSTER SESSION

Volume 4455 Micro- and Nano-optics for Optical Interconnection and Information Processing

SESSION 1
SESSION 2
SESSION 3
SESSION 4
SESSION 5
SESSION 6
SESSION 7
SESSION 8
WORKSHOP ON MICROLENS MEASUREMENT STANDARDIZATION
POSTER SESSION

Contents

Volume 4456 Controlling and Using Light in Nanometric Domains

BIOLOGICAL SYSTEMS
AG- AND AU-NANOPARTICLES
SEMICONDUCTOR NANOPARTICLES
PROPERTIES OF MICRO- AND NANOSTRUCTURES
POSTER SESSION

Volume 4457 Spatial Light Modulators: Technology and Applications

NOVEL SLM DEVICES AND MODULATION TECHNIQUES
CURRENT SLMS: IMPROVED PERFORMANCE
SLM APPLICATIONS
LATE NEWS

Volume 4458 Switching and Solar Materials

SOLAR MATERIALS
POSTER SESSION
SMART WINDOWS AND REFLECTORS I
SMART WINDOWS AND REFLECTORS II
ELECTROCHROMIC MATERIALS I
ELECTROCHROMIC MATERIALS II
SWITCHING DEVICES
POSTER SESSION

Volume 4459 Photorefractive Fiber and Crystal Devices: Materials, Optical Properties, and Applications VII, and Optical Data Storage

MATERIAL ASPECTS AND PROPERTIES
OPTICAL PROPERTIES, WAVE MIXING, AND DEVICES I
OPTICAL PROPERTIES, WAVE MIXING, AND DEVICES II
STORAGE, FIBERS, AND DEVICES I
STORAGE, FIBERS, AND DEVICES II

Contents

APPLICATIONS AND DATA PROCESSING I
APPLICATIONS AND DATA PROCESSING II
POSTER SESSION
RECORDING MATERIALS
HOLOGRAPHIC RECORDING APPLICATIONS
RECORDING PHYSICS
FOUR-DIMENSIONAL STORAGE
POSTER SESSION

Volume 4461 Linear and Non-Linear Optics of Organic Materials

FUNDAMENTALS
MOLECULES
MEASUREMENT TECHNIQUES
POLYMERS
THIN FILMS
DEVICES AND PHOTONIC CRYSTALS
POSTER SESSION

Volume 4462 Nonlinear Optical Transmission Processes and Organic Photorefractive Materials

NONLINEAR OPTICAL ABSORPTION PROCESSES
NONLINEAR OPTICAL TRANSMISSION STUDIES
NONLINEAR OPTICAL PROCESSES
MATERIALS
PHOTOPHYSICS
RECENT TRENDS

Volume 4463 Liquid Crystals V

HOLOGRAPHIC AND SWITCHING ELEMENTS
SURFACES, NANOMATERIALS AND PERIODIC STRUCTURES
INFRARED, MM-WAVE AND DISPLAY
NOVEL LIQUID CRYSTALLINE STUDIES

Contents

NOVEL LIQUID CRYSTAL OPTICAL ELEMENTS

POSTER SESSION

Volume 4464 Organic Light Emitting Materials and Devices V

ACTIVE MATRIX ORGANIC EMISSIVE DISPLAYS

FLEXIBLE ORGANIC LIGHT-EMITTING DEVICES

POLYMERIC LIGHT-EMITTING MATERIALS AND DEVICES

FABRICATION TECHNIQUES FOR POLYMER EMISSIVE DISPLAYS

ORGANIC ELECTROLUMINESCENT DEVICES WITH NOVEL AND MODIFIED ELECTRODES

SPECTROSCOPIC STUDIES AND ELECTRICAL PROBES OF ORGANIC LIGHT-EMITTING STRUCTURES

ELECTROLUMINESCENCE AND PHOTOEMISSION STUDIES OF ORGANIC PHOSPHORS

ELECTRONIC STRUCTURE OF ORGANIC INTERFACES

COMBINATORIAL AND DEVICE OPTIMIZATION APPROACHES

DEVELOPMENT OF NOVEL CHARGE TRANSPORT MATERIALS AND THEIR APPLICATION IN DEVICES

POSTER/DEMO SESSION - MONDAY

Volume 4465 Organic Photovoltaics II

SOLID STATE ORGANIC PHOTOVOLTAICS: EFFICIENCY AND STABILITY

ROLES OF INTERFACES IN ORGANIC SOLAR CELLS

DYNAMICS OF CHARGE PHOTOGENERATION IN POLYMER BLENDS

SELF-ASSEMBLY AND HYBRID SYSTEMS

POSTER SESSION

Volume 4466 Organic Field Effect Transistors

DEVICE PHYSICS, INTERFACES, AND SURFACES MATERIALS

NOVEL DEVICES AND SELF-ASSEMBLY

NEW PATTERNING METHODS AND TRANSPORT MECHANISMS

Volume 4467 Complex Mediums II: Beyond Linear Isotropic Dielectrics

Contents

INAUGURAL SESSION
CONSTITUTIVE RELATIONS I
PROPAGATION
THIN FILMS
MAGNETIC EFFECTS
SCATTERING
COMPOSITE MATERIALS
NONLINEAR MATERIALS
CONSTITUTIVE RELATIONS II
POSTER SESSION

Volume 4468 Engineering Thin Films with Ion Beams, Nanoscale Diagnostics, and Molecular Manufacturing

POSTER SESSION

Volume 4469 Raman Spectroscopy and Light Scattering Technologies in Materials Science

POLYMERS AND LIQUID CRYSTALS
MOLECULAR APPLICATIONS
SOLID STATE APPLICATIONS
NANOTECHNOLOGY

Volume 4453 Materials and Devices for Photonic Circuits II

SESSION 1

PHOTONIC BANDGAP DEVICES

Optimal design of 1D photonic bandgap devices by using the Leaky mode propagation method [4453-3]

A. Giorgio, A. Perri, M. Armenise

Cylindrical waveguide formed of multilayered film having 1D photonic bandgap structure [4453-4]

Y. Matsuura, T. Katagiri, M. Miyagi

Reflection properties of a layer or half-space of particulate photonic crystal [4453-5]

P. Belov, C. Simovski

SESSION 2

OPTICAL DEVICES I

Guided-wave acousto-optic interactions and devices on spherical surfaces [4453-6]

C. Tsai

GaN-based acousto-optic devices for blue optoelectronics [4453-7]

D. Ciplys, R. Gaska, M. Shur, R. Rimeika, J. Yang, M. Asif Khan

Panoramic rf spectrum analysis with high productivity using acousto-optic components [4453-9]

B. Gurevich, O. Aveltsev, S. Andreyev, A. Belyaev, A. Rodiontsev, V. Vorobiev, S. Alymkulov

SESSION 3

OPTICAL DEVICES II

Integrated thermo-optic switches in silica/polymer waveguide technology [4453-10]

H. Yao, N. Keil, C. Zawadzki, K. Loesch, K. Satzke, W. Wischmann, J. van Wirth, J. Bauer, M. Bauer, J. Schneider

Multilayer optical fan-out device composed of stacked monomode waveguides [4453-11]

U. Streppel, P. Dannberg, C. Waechter, A. Braeuer, P. Nicole, L. Froehlich, R. Houbertz, M. Popall

Shift of light frequency in taper fiber under the action of acoustic pulse [4453-12]

V. Torchigin, V. Sychugov, L. Magdich, S. Torchigin

SESSION 4

OPTICAL DEVICES III

Peak optical power and thermal performance of quantum cascade lasers [4453-13]

G. Scamarcio, M. Troccoli, V. Spagnolo

SESSION 5

PHOTONIC MATERIALS AND TECHNOLOGIES

Ion exchange in glass: a mature technology for photonic devices [4453-16]

G. Righini, S. Pelli

Electron-beam direct-write polymeric optical waveguides [4453-17]

W. Wong, E. Pun

Optical properties of the second harmonic generation for nonlinear crystal CsLiB6O10 [4453-18]

L. Wang, S. Chen, J. Xue, Y. Men

New chalcogenide alloy as phase-change optical recording material [4453-19]

Y. Sharma, L. Singh, P. Bhatnagar

Dispersion characteristics of single-mode As₂S₃ fiber [4453-20]

Y. Liao, C. Shi, M. Li

Second harmonic generation in pulsed-laser-deposited nanocrystalline ZnO films [4453-32]

R. Thareja, T. Ohshima, A. Mitra, T. Ikegami, K. Ebihara

SESSION 6

BIOLOGICAL AND QUANTUM COMPUTING

Is the brain a Clifford algebra quantum computer? [4453-22]

V. Labunets, E. Labunets-Rundblad, J. Astola

Proposed optical data link whose propagation delay is distance invariant [4453-26]

G. Konesky

SESSION 7

POSTER SESSION

Fiber optic linear smoke fire detector [4453-27]

S. Kulakov, O. Moskaletz, L. Preslencev, A. Shabardin

Novel wavelength switch with 2x2 MMI SOI photonic crystal inside [4453-28]

S. Tsao, H. Guo, Y. Chen

Analysis of a Mach-Zehnder interferometer switch with vertical coupling filter waveguide structure [4453-29]

S. Tsao, H. Huang, P. Peng

In search of highly effective modeling tools for the CAD of photonic devices and components [4453-30]

M. Forastiere, G. Righini, G. Bellanca, G. Tartarini, P. Bassi

Nonlinear optical characteristics of sol-gel-derived highly oriented ferroelectric strontium barium niobate thin films [4453-31]

J. Koo, E. Kang, J. Jang, B. Bae

Volume 4454 Materials for Infrared Detectors

SESSION 1

INFRARED DETECTORS FOR SPACE APPLICATIONS

[Space applications for HgCdTe at FIR wavelengths between 50 and 150 \$\mu\text{m}\$ \[4454-2\]](#)

A. Betz, R. Boreiko

[Advances in large-area Hg_{1-x}Cd_xTe photovoltaic detectors for remote sensing applications \[4454-3\]](#)

P. Wijewarnasuriya, M. Zandian, J. Phillips, D. Edwall, R. DeWames, G. Hildebrandt, J. Bajaj, J. Arias, A. D'Souza, F. Moore

SESSION 2

MULTICOLOR INFRARED DETECTORS

[New advanced two-color \(MW/LW\) infrared detector and focal plane array design using InGaAs/InAlAs quantum well infrared photodetectors on InP substrates \[4454-5\]](#)

S. Kennerly, J. Little, A. Goldberg, R. Leavitt

[Large-format broadband multicolor GaAs/AlGaAs quantum well infrared photodetector \(QWIP\) focal plane arrays \[4454-6\]](#)

S. Bandara, S. Gunapala, J. Liu, D. Rafol, D. Ting, J. Mumolo, F. Reininger, J. Fastenau, A. Liu

[Proposed two-color HgCdTe focal plane array \[4454-7\]](#)

V. Dhar, V. Gopal

SESSION 3

MBE HGCDTE MATERIAL AND DETECTORS

[Advances in HgCdTe-based infrared detector materials: the role of molecular-beam epitaxy \[4454-8\]](#)

T. de Lyon, R. Rajavel, J. Roth, J. Jensen, G. Olson, P. Brewer, A. Hunter, T. Williamson, S. Bailey, J. Bangs, A. Buell, G. Chapman, A. Childs, E. Gordon, M. Jack, S. Johnson, K. Kosai, K. Maranowski, E. Patten, J. Peterson, L. Pham, W. Radford, V. Randall, J. Varesi, J. Wilson

[Hg_{1-x}Cd_xTe\(112\) nucleation on silicon composite substrates \[4454-9\]](#)

P. Boieriu, G. Brill, Y. Chen, S. Velicu, N. Dhar

[Electrical activation and electrical properties of arsenic-doped Hg_{1-x}Cd_xTe epilayers grown by MBE \[4454-10\]](#)

Y. Selamet, G. Badano, C. Grein, P. Boieriu, V. Nathan, S. Sivananthan

SESSION 4

QUANTUM WELL INFRARED DETECTORS

[GaInAs/InP quantum well infrared photodetectors grown on Si substrates \[4454-14\]](#)

M. Razeghi, J. Jiang, C. Jelen, G. Brown

[Proton and H⁺-ion radiation effect on intersubband transition in GaAs/AlGaAs multiple quantum wells \[4454-12\]](#)

Y. Berhane, M. Manasreh, B. Weaver, H. Tan, C. Jagadish

[Nonadiabatic transient behavior of quantum well photodetectors \[4454-13\]](#)

D. Cardimona, D. Huang, C. Morath, H. Norton

SESSION 5

INFRARED MATERIAL AND DEVICE PHYSICS

RIE-induced n-on-p junction HgCdTe photodiodes: effects of passivant technology on bake stability [4454-15]

J. Dell, J. Antoszewski, J. White, R. Pal, T. Nguyen, C. Musca, L. Faraone

Au-doped HgCdTe for infrared detectors and focal plane arrays [4454-17]

M. Chu, S. Terterian, P. Wang, S. Mesropian, H. Gurgenian, D. Pan

Dark current transport mechanisms in narrow-gap heterojunctions for IR arrays [4454-18]

F. Sizov, J. Gumenjuk-Sichevskaya, Y. Sidorov, V. Vasilev, A. Golenkov, V. Zabudsky, V. Reva, Y. Derkach, V. Tetyorkin

Noise reduction in BIB-type detectors [4454-27]

E. Sohn, E. Ruiz Schneider, L. Salas, L. Gutierrez, I. Cruz-Gonzales

Single-element PV and PC infrared detectors for medical applications [4454-28]

Y. Kim, M. Han, M. Jeoung, N. Yim, S. Hahn

SESSION 6

UNCOOLED AND HIGH-OPERATING TEMPERATURE DETECTORS

High-sensitivity (25-um pitch) microbolometer FPAs [4454-19]

D. Murphy, M. Ray, R. Wyles, J. Asbrock, N. Lum, A. Kennedy, J. Wyles, C. Hewitt, G. Graham, T. Horikiri, J. Anderson, D. Bradley, R. Chin, T. Kostrzewa

Oxygen dependent transport properties in La_{0.7}Ba_{0.3}MnO₃-delta thin films for uncooled infrared bolometric materials [4454-20]

K. Hayashi, E. Ohta, H. Wada

High-operating-temperature (HOT) detector requirements [4454-21]

M. Kinch

High-temperature HgCdTe/CdTe/Si infrared photon detectors by MBE [4454-22]

S. Velicu, R. Ashokan, C. Grein, S. Sivananthan, P. Boieriu, D. Rafol-DUPLICATE RECORD DO NOT USE

SESSION 7

AVALANCHE PHOTODIODES

MWIR HgCdTe avalanche photodiodes [4454-23]

J. Beck, C. Wan, M. Kinch, J. Robinson

Advances in linear and area HgCdTe APD arrays for eyesafe LADAR sensors [4454-24]

M. Jack, J. Asbrock, C. Anderson, S. Bailey, G. Chapman, E. Gordon, P. Herning, M. Kalisher, K. Kosai, V. Liquori, V. Randall, J. Rosbeck, S. Sen, P. Wetzel, M. Halmos, P. Trotta, A. Hunter, J. Jensen, T. de Lyon, W. Johnson, B. Walker, W. Trussel, A. Hutchinson, R. Balcerak

Band engineering of infrared avalanche photodiodes for improved impact ionization coefficient ratios [4454-25]

C. Grein, M. Flatte, H. Ehrenreich

Design requirements for high-sensitivity UV solar blind imaging detectors based on AlGaIn/GaN photodetector arrays: a review [4454-26]

C. Litton, P. Schreiber, G. Smith, T. Dang, H. Morkoc

SESSION 8

POSTER SESSION

RF magnetron sputtering SiO_x, ZnS, and Al₂O₃ films for capsulation of nanostructured porous silicon [4454-31]

L. Monastyrskii, R. Kovtun, A. Vlasov, S. Kostukevich

Porous silicon and cadmium-mercury-telluride (CMT)-based heterostructures for IR detectors [4454-33]

L. Monastyrskii, A. Vlasov, R. Kovtun

Micro-Raman spectra of Cd(1-y)Zn(y)Te crystals [4454-35]

H. Huang, J. Xu, J. Wang, C. Zhang, Y. Mo, S. Pan, G. Zhang

Photocurrent extraction effect in thin variable-gap photoresistors [4454-37]

B. Sokolovsky, V. Pysarevsky, R. Kovtun

Infrared photoluminescence of InAs/GaAs epilayers grown by molecular beam epitaxy [4454-36]

G. Kim, J. Lee, H. You, Y. Moon, J. Choi, J. Leem

Volume 4455 Micro- and Nano-optics for Optical Interconnection and Information Processing

SESSION 1

SESSION 1

Ultrafast optical properties in dendrimer and dendrimer metal nanocomposites [4455-2]

T. Goodson

Anisotropic nanometal particles on TiO₂ film using sol-gel method [4455-3]

M. Kawazu, M. Nara, H. Yamamoto

Recent progress in hybrid glass materials for micro-optical component fabrication [4455-41]

A. Karkkainen, J. Rogers, G. Jabbour, J. Rantala, M. Descour

SESSION 2

SESSION 2

Three-dimensional object recognition and visualization using integral imaging [4455-6]

B. Javidi, O. Matoba, E. Tajahuerce

Compact image capturing system based on compound imaging and digital reconstruction [4455-7]

J. Tanida, Y. Kitamura, K. Yamada, S. Miyatake, M. Miyamoto, T. Morimoto, Y. Masaki, N. Kondou, D. Miyazaki, Y. Ichioka

Optoelectronic face recognition system using diffractive optical elements: design and evaluation of compact parallel joint transform correlator (COPaC) [4455-8]

K. Kodate, E. Watanabe, R. Inaba

SESSION 3

SESSION 3

Scalable micro mechanical optical crossconnects [4455-10]

R. Ryf, D. Neilson, C. Giles

Linewidth enhancement factor of the electroabsorption modulator [4455-11]

G. Zhu, N. Dutta

Optical actuators based on photorefractive materials controlled by holographic gratings [4455-12]

A. Fields, M. Curley, S. Sarkisov, N. Kukhtarev, M. Kulishov, G. Adamovsky, C. Smith, L. Moore

All-optical switching module based on diffractive optics technology [4455-13]

T. Kamiya, Y. Komai, K. Kodate, R. Hainberger

SESSION 4

SESSION 4

Free-space optical backplanes based on beaconlike links or on a ring bus [4455-15]

M. Karppinen, J. Maekinen, A. Kempainen, M. Borenus, P. Karioja

Optical interconnection testbed using fiber image guides [4455-16]

S. Hong, L. Zhang, A. Sawchuk

Connection of two-dimensional optic fiber arrays using optical beam self-trapping in photocurable media [4455-17]

S. Sarkisov, V. Grimalsky, M. Curley, G. Adamovsky, C. Martin

SESSION 5

SESSION 5

Micro-optical elements and optoelectronic devices for optical interconnect applications [4455-18]

M. Taghizadeh, A. Waddie

Time-domain simulation of optical multimode chip-to-chip interconnects [4455-19]

E. Griese, J. Schrage, J. Gerling, G. Mrozynski

Low-latency optoelectronic processor-memory interconnection demonstrator [4455-21]

S. Fancey, J. Jahns, P. Lukowicz, J. Grzyb

SESSION 6

SESSION 6

Sense and nonsense of logic-level optical interconnect: reflections on an experiment [4455-22]

J. Van Campenhout, M. Brunfaut, W. Meeus, J. Dambre, M. De Wilde

Demonstrating optoelectronic interconnect in a FPGA-based prototype system using flip-chip mounted 2D arrays of optical components and 2D POF-ribbon arrays as optical pathways [4455-23]

M. Brunfaut, W. Meeus, J. Van Campenhout, R. Annen, P. Zenklusen, H. Melchior, R. Bockstaele, L. Vanwassenhove, J. Hall, B. Wittman, A. Neyer, P. Heremans, J. Van Koetsem, R. King, H. Thienpont, R. Baets

Linearly tapered waveguides on SOI for optical interconnect waveguide-to-fiber coupling [4455-24]

S. Tsao, M. Chen, H. Huang

Analysis of poling-induced polymer waveguide losses in push-pull Mach-Zehnder modulators [4455-25]

A. Yacoubian, W. Lin, D. Olson, J. Bechtel

Micromachined two-chip WDM filters with stable half symmetric cavity [4455-26]

M. Aziz, J. Pfeiffer, J. Peerlings, P. Meissner

SESSION 7

SESSION 7

Recent developments in parallel optical interconnects [4455-14]

A. Kirk, D. Plant

Design and optimization of VCSEL-based micro-optical relay systems: bringing optical information to silicon chips [4455-28]

V. Baukens, G. Verschaffelt, H. Ottevaere, I. Veretennicoff, H. Thienpont

Electro-optical circuit boards with four-channel butt-coupled optical transmitter and receiver modules [4455-29]

A. Himmler, S. Bargiel, F. Ebling, H. Schroeder, H. Franke, G. Spickermann, E. Griese, C. Lehnberger, L. Oberender, A. Koske, G. Mrozynski, D. Steck, E. Strake, W. Suellau

SESSION 8

SESSION 8

Free-space monolithic microoptical modules: a low-cost route for photonic interconnects to silicon [4455-31]

H. Thienpont, V. Baukens, H. Ottevaere, B. Volckaerts, P. Tuteleers, P. Vynck, M. Vervaeke, C. Debaes, G. Verschaffelt, A. Hermanne, I. Veretennicoff

Self-aligned coupling of optical transmitter and receiver modules to board-integrated optical multimode waveguides [4455-32]

E. Griese, A. Himmler, K. Klimke, A. Koske, J. Kropp, S. Lehmacher, A. Neyer, W. Suellau

Two-dimensional electrophoretic microlens alignment [4455-33]

A. Birkbeck, M. Ozkan, E. Ata, S. Esener

Systems engineering for planar-integrated free-space optics [4455-34]

S. Sinzinger

SESSION 9

WORKSHOP ON MICROLENS MEASUREMENT STANDARDIZATION

Optical measurement methods for refractive microlenses and arrays [4455-46]

N. Lindlein, J. Schwider

Microlens arrays fabricated by deep lithography with protons and their characterization [4455-49]

H. Ottevaere, P. Tuteleers, B. Volchaerts, V. Baukens, J. Lamprecht, J. Schwider, A. Hermanne, K. Naessens, I. Veretennicoff, H. Thienpont

Fabrication and testing of planar microlens arrays by ion exchange technique in glass [4455-50]

J. Baehr, U. Krackhardt, K. Brenner

SESSION 10

POSTER SESSION

Passively aligned fiber-optic transmitter integrated into LTCC module [4455-36]

M. Karppinen, K. Kautio, M. Haekkinen, J. Haekkilae, P. Karioja, T. Jouhti, A. Tervonen, M. Oksanen

Volume 4456 Controlling and Using Light in Nanometric Domains

SESSION 1

BIOLOGICAL SYSTEMS

Position control of micrometer-sized particle with evanescent photon force [4456-3]

S. Nam, N. Umeda, A. Takayanagi

Scanning near-field optical microscopy: application to biological sciences [4456-4]

T. Lim

SESSION 2

AG- AND AU-NANOPARTICLES

Lifetime and dephasing of plasmons in Ag nanoparticles [4456-5]

M. Scharte, R. Porath, T. Ohms, M. Aeschlimann, B. Lamprecht, H. Ditlbacher, F. Aussenegg

Electromagnetic energy transport below the diffraction limit in periodic metal nanostructures [4456-6]

S. Maier, P. Kik, M. Brongersma, H. Atwater

SESSION 3

SEMICONDUCTOR NANOPARTICLES

Probing the interactions of single CdSe quantum dots with their local environment [4456-8]

F. Koberling, A. Mews, I. Potapova, T. Basche

Optical properties of II-VI semiconductor nanoparticles [4456-9]

R. Neuendorf, A. Brysch, G. Bour, U. Kreibig

Design of domain size and molecular interactions in organic semiconductors to control the emission yield of thin films [4456-10]

D. Schlettwein, H. Graaf, W. Michaelis, N. Jaeger, T. Unold, G. Bauer, H. Yanagi

SESSION 4

PROPERTIES OF MICRO- AND NANOSTRUCTURES

Incorporation of organic dye molecules in nanoporous crystals for the development of hexagonal solid state microlasers [4456-11]

M. Wark, M. Ganschow, G. Schulz-Ekloff, D. Woehrle

Optical near-field phase singularities produced by microstructures [4456-13]

A. Nesci, R. Daendliker, M. Salt, H. Herzig

Near fields scattered by small- and large-scale rough surfaces and lateral fluctuations in the permittivity and permeability of nanostructures [4456-14]

E. Bahar

SESSION 5

Multiphoton evanescent wave spectroscopy and dynamics [4456-16]

V. Bordo, H. Rubahn

Sub-micron elastic property characterization of materials using a near-field scanning optical microscope [4456-17]

D. Blodgett, J. Spicer

Use of vector diffraction theory in theoretical and experimental investigation of SNOM tips [4456-19]

N. Voznesensky, V. Veiko

SESSION 6

POSTER SESSION

Fast-scanning near-field scanning optical microscopy using a high-frequency dithering probe [4456-22]

Y. Seo, W. Jhe

Near-field optical mapping using cantilevered nanoscopic Schottky diode tips [4456-25]

B. Rosner, T. Bork, V. Agrawal, P. Neuzil, D. van der Weide

Volume 4457 Spatial Light Modulators: Technology and Applications

SESSION 1

NOVEL SLM DEVICES AND MODULATION TECHNIQUES

[Optical nonlinearities of liquid crystals controlled by surfaces \[4457-2\]](#)

L. Lucchetti, D. Lucchetta, O. Francescangeli, F. Simoni

[Optically addressed spatial light modulators for replaying computer-generated holograms \[4457-3\]](#)

S. Coomber, C. Cameron, J. Hughes, D. Sheerin, C. Slinger, M. Smith, M. Stanley

[LC-based subwavelength diffractive optical element structures for optical cross-connect applications \[4457-5\]](#)

B. Apter, S. Acco, U. Efron

SESSION 2

CURRENT SLMS: IMPROVED PERFORMANCE

[Ferroelectric liquid crystal SLMS: from prototypes to products \[4457-6\]](#)

M. O'Callaghan, M. Handschy

[Multiple quantum well \(MQW\) spatial light modulators \(SLMs\) for optical data processing and beam steering \[4457-8\]](#)

J. Ahearn, M. Weiler, S. Adams, T. McElwain, A. Stark, L. DePaulis, A. Sarafinas, T. Hongsmatip, R. Martin, B. Lane

[DLP technology: applications in optical networking \[4457-9\]](#)

L. Yoder, W. Duncan, E. Koontz, J. So, T. Bartlett, B. Lee, B. Sawyers, D. Powell, P. Rancuret

[Multiple quantum well spatial light modulators: design, fabrication, characterization \[4457-10\]](#)

S. Junique, Q. Wang, H. Martijn, J. Guo, B. Noharet, J. Borglind, B. Hirschauer, H. Malm, D. Agren, O. Oeberg, J. Andersson

SESSION 3

SLM APPLICATIONS

[Application of SLMs for optical metrology \[4457-12\]](#)

H. Tiziani, T. Haist, J. Liesener, M. Reicherter, L. Seifert

[Reconfigurable free-space optical interconnection module for pipelined optoelectronic parallel processing \[4457-14\]](#)

M. Ishikawa, M. Naruse, A. Goulet, H. Toyoda, Y. Kobayashi

[Spatial light modulators for multimedia database processing \[4457-15\]](#)

P. Mitkas

[Programmable amplitude apodizers in liquid crystal spatial light modulators \[4457-16\]](#)

J. Campos, M. Yzuel, A. Marquez, J. Escalera, J. Davis, C. Lemmi, S. Ledesma

[Wavelength tuning and multiple-wavelength generation using a reflection-type liquid crystal spatial light modulator \[4457-18\]](#)

R. Pan, C. Shieu, W. Lu, M. Huang, C. Pan

[Research on optical A/D conversion using interference modulators \[4457-17\]](#)

M. Li, G. Zheng, S. Zhuang

Liquid crystal light valve technologies for display applications [4457-27]

H. Kikuchi, K. Takizawa

3D quantitative imaging of the microvasculature with the Texas Instruments Digital Micromirror Device [4457-19]

Y. Fainman, E. Botvinick, J. Price, D. Gough

LCD based electro-optical processor for discrete algorithms [4457-20]

E. Lueder

Phase correction in a laser chain using an optically addressed LC SLM [4457-22]

B. Wattelier, J. Chanteloup, J. Zou, A. Sauteret, A. Migus, J. Huignard, B. Loiseaux

Spatial light modulators in telecommunication systems [4457-23]

F. Yu, S. Jutamulia

Adaptive optical elements for laser beam control [4457-24]

A. Kudryashov, V. Samarkin, A. Aleksandrov

Optoelectronic arbitrary-waveform generator for radar applications [4457-25]

S. Tonda-Goldstein, A. Monsterleet, D. Dolfi, J. Huignard, P. Sape, G. Granger, N. Breuil, J. Chazelas

CMOS/LCOS-based image transceiver device: II [4457-26]

U. Efron, I. Davidov, V. Sinelnikov, A. Friesem

SESSION 4

LATE NEWS

Micromechanical slit positioning system as a transmissive spatial light modulator [4457-29]

R. Riesenber

Volume 4458 Switching and Solar Materials

SESSION 1

SOLAR MATERIALS

[Solar cells with porous silicon as antireflection layer \[4458-2\]](#)

Z. Adamian, A. Hakhoyan, V. Aroutiounian, R. Barseghian, K. Touryan

[Novel high-performance scattering materials for use in energy-saving light fittings and skylights based on polymer pigmented with polymer \[4458-3\]](#)

G. Smith, A. Earp, J. Franklin, G. McCredie

[Angular-dependent optical properties of coated glazings: validation of two predictive algorithms](#)

A. Roos, J. Karlsson, P. van Nijnatten, M. Hutchins, P. Polato, E. Nichelatti, M. Montecchi, F. Olive, C. Anderson

[Plasmon-mediated visible and near-infrared transmission through sub-30-nm holes in metal films: potential in solar energy applications \[4458-5\]](#)

G. Smith, S. Gerritsen, M. Hossain, G. McCredie

[Quantum dot solar cells \[4458-6\]](#)

V. Aroutiounian, S. Petrosyan, A. Khachatryan, K. Touryan

[New temperable solar coatings: Tempsol \[4458-7\]](#)

H. Demiryont

SESSION 2

POSTER SESSION

[Calculations of the reflectance of porous silicon and other antireflection coating to silicon solar cells \[4458-8\]](#)

V. Aroutiounian, K. Maroutyan, A. Zatikyan, C. Levy-Clement, K. Touryan

[Efficiency of solar cells immersed in liquid dielectrics \[4458-9\]](#)

Y. Abramian, V. Serago, V. Aroutiounian, D. Anisimova, V. Stafeev, G. Karamian, G. Martoyan, A. Mouradyan

[Theory of bifacial sunlit silicon solar cells \[4458-10\]](#)

F. Gasparyan, V. Aroutiounian

[Black coatings for stray light and thermal control applications \[4458-42\]](#)

K. Moldosanov, V. Kashirin, A. Skrynnikov, I. Anisimova, V. Anisimov, G. Kobtsov

SESSION 3

SMART WINDOWS AND REFLECTORS I

[Progress in switching windows \[4458-11\]](#)

C. Lampert

[Electrochromic smart windows: progress on energy efficiency, durability, and manufacturability](#)

A. Azens, C. Granqvist

[2000 survey of window manufacturers on the subject of switchable glass \[4458-13\]](#)

M. LaPointe, G. Sottile

Tantalum oxide thin film ionic conductors for monolithic electrochromic devices [4458-14]

M. Hutchins, N. Butt, A. Topping, J. Gallego, P. Milne, D. Jeffrey, I. Brotherston

SESSION 4

SMART WINDOWS AND REFLECTORS II

Electrochromism of Mg-Ni hydride switchable mirrors [4458-15]

J. Isidorsson, I. Giebels, M. Di Vece, R. Griessen

Electrochromic tungsten oxide films for variable infrared reflectance devices [4458-16]

M. Hutchins, J. Gallego, P. Milne, D. Jeffrey, I. Brotherston, E. O'Keefe, A. Topping, N. Butt

Electrochromic switching in ionically self-assembled nanostructures [4458-17]

J. Janik, J. Heflin, D. Marciu, M. Miller, H. Wang, H. Gibson, R. Davis

SESSION 5

ELECTROCHROMIC MATERIALS I

Properties of electrochromic nickel-vanadium oxide films sputter-deposited from nonmagnetic alloy target [4458-19]

E. Avendano, A. Azens, G. Niklasson

Molecular and optical properties of nickel oxide clusters [4458-20]

J. Nagai

In-situ spectroscopic studies of electrochromic tungsten oxide films [4458-21]

N. Ozer, M. Demirbas, S. Ozyurt

Optical and electrochromic properties of sol-gel-deposited tungsten oxide films [4458-22]

E. Ozkan, S. Lee, P. Liu, C. Tracy, F. Tepehan, J. Pitts, S. Deb

SESSION 6

ELECTROCHROMIC MATERIALS II

Optical absorption in amorphous Li_xWO_y films: influence of sputtering conditions [4458-24]

L. Berggren, G. Niklasson

Lithium insertion in tungsten oxide thin films [4458-25]

S. Lee, M. Seong, E. Ozcan, C. Tracy, F. Tepehan, S. Deb

Optical and electrochromic properties of amorphous and crystalline tungsten oxide films [4458-26]

E. Ozkan, S. Lee, C. Tracy, F. Tepehan, J. Pitts, S. Deb

Optical properties of PbTiO_3 films deposited by sol-gel process and pulsed laser deposition: a comparison [4458-27]

N. Ozer, L. Tsakalakos, S. Akyuz, T. Sands

Stoichiometry of DC sputtered WO_3 [4458-37]

P. Sieck, K. Hukari, J. Countrywood, V. Kodash

SESSION 7

SWITCHING DEVICES

Digital projection systems based on LCOS [4458-28]

B. Millikan, J. Wellman

Performance improvements for switchable H-PDLC gratings using morphological studies [4458-29]

A. Fontecchio, G. Crawford, C. He, D. Content

Polydiacetylene as an all-optical picosecond switch [4458-30]

H. Abdeldayem, D. Frazier, M. Paley

New solely Prussian-blue EC configurations [4458-38]

D. Rosseinsky, A. Soutar, I. Annergren, A. Glidle

SESSION 8

POSTER SESSION

Thermochromic nondoped and W-doped VO₂ films heteroepitaxially grown on glass substrate using ZnO polycrystalline films as buffer layers [4458-32]

K. Kato, P. Song, Y. Shigesato, H. Odaka

SOI X-crossing optical switch [4458-33]

S. Tsao, H. Guo, Y. Chen

Control of two-photon absorption by using electromagnetic field in sodium and rubidium vapors

D. Wang, J. Gao, J. Xu, G. La Rocca, F. Bassani

Volume 4459 Photorefractive Fiber and Crystal Devices: Materials, Optical Properties, and Applications VII, and Optical Data Storage

SESSION 1

MATERIAL ASPECTS AND PROPERTIES

[Effects of annealing atmosphere on photorefractive BaTiO₃ \[4459-1\]](#)

J. Chang, C. Huang, C. Sun

[Progress in deposited refractive index engineered materials and devices \[4459-3\]](#)

C. Fortmann, E. Jaen, W. Anderson, A. Manan, N. Hata

[Dependence of the amount of stored information and its input and access rate on storage medium characteristics in volume holographic memories \[4459-4\]](#)

B. Gurevich, S. Gurevich, K. Zhumaliev, S. Alymkulov

SESSION 2

OPTICAL PROPERTIES, WAVE MIXING, AND DEVICES I

[Holographic recording in polymeric materials with diffusional amplification \[4459-10\]](#)

N. Kukhtarev, T. Kukhtareva, H. Abdeldayem, W. Witherow, B. Penn, D. Frazier, A. Veniaminov

[Self-enhanced accumulative recording of nonvolatile photorefractive holograms in LiNbO₃:Fe:Mn \[4459-11\]](#)

D. Liu, L. Liu, Y. Liu, C. Zhou, J. Xu, L. Xu

[Exact spatiotemporal simulation of self-organization of light into hexagonal patterns in photorefractive materials \[4459-12\]](#)

J. Zhang, P. Banerjee

[Investigation of the photosensitivity of LiNbO₃:BaFeO₃ crystal \[4459-13\]](#)

A. Darwish, B. Koplitz, E. Jackson, F. Jalbout, A. Jalbout, M. Aggarwal

SESSION 3

OPTICAL PROPERTIES, WAVE MIXING, AND DEVICES II

[Angular multiplexing with spherical reference wave and applications \[4459-14\]](#)

C. Sun, O. Yueh, C. Hsu, W. Su

[Contradirectional two-wave mixing in bulk and multimode fibers of iron doped lithium niobate \[4459-16\]](#)

M. Saleh, D. Evans, R. Shariff, T. Pottenger, L. Lu, R. Meltzer, W. Yen, T. Bunning, S. Guha

[Volume hologram recording with an applied electric field and a moving grating in photorefractive crystals \[4459-17\]](#)

M. Majles Ara, M. Talebi, C. Vijayan, R. Sirohi

SESSION 4

STORAGE, FIBERS, AND DEVICES I

[IR recording in photorefractive crystals via two-step processes \[4459-18\]](#)

E. Kraetzig

Phase-conjugate distance-measurement interferometer with frequency modulation of a laser diode [4459-19]

Y. Ishii

Electro-optic polymer optical fibers and their device applications [4459-20]

G. Peng, P. Ji, P. Chu

Photofabrication for microphotronics in glass [4459-65]

K. Itoh, W. Watanabe, K. Yamada, K. Hayashi, J. Nishii

Efficient uni and bi-directional oscillations in photorefractive ring resonators [4459-22]

M. Kaczmarek, R. Cudney, C. Yang, R. Eason

SESSION 5

STORAGE, FIBERS, AND DEVICES II

Photorefractive conjugator with large tolerance to the adverse effect of ordinary polarized light

H. Lee, H. Kung, H. Yau, J. Liu

New photorefractive imaging x-ray sensor [4459-24]

D. Berben, B. Andreas, K. Buse

Thin crystal film optical components [4459-26]

L. Ignatov, P. Lazarev, N. Ovchinnikova, M. Paukshto

SESSION 6

APPLICATIONS AND DATA PROCESSING I

Recording and retrieving of multiplexed near-field holograms [4459-27]

B. Lee, K. Kim, J. Kang, J. Park

Optical spectrogram scope (OSS) for measurement of ultrashort pulses [4459-28]

T. Konishi, K. Tanimura, Y. Oshita, Y. Ichioka

Edge enhancement in photorefractive polymers [4459-29]

K. Matsushita, D. Miyazaki, P. Banerjee

Asymmetric channel isolation in multichannel acousto-optic cells made of tellurium dioxide crystal [4459-30]

S. Kulakov, V. Kludzin, V. Molotok, V. Kulakov

Genetic algorithms-based unipolar IPA model [4459-31]

C. Uang, Y. Yang, C. Jiang

SESSION 7

APPLICATIONS AND DATA PROCESSING II

Volume holographic interconnection using random phase encoding [4459-32]

W. Su, C. Sun

Wavelet invariant pattern recognition system based on the volume holographic correlator [4459-33]

Q. Xue, W. Tan, Y. Yan, Q. He

Fuzzy based IPA model [4459-35]

C. Uang, S. Lin, C. Chen

SESSION 8

POSTER SESSION

Effect of doping on photosensitivity of sol-gel derived silica glasses [4459-6]

A. Leyderman, D. Arcos, C. Lee

Fiber optic waveguide device based on stibazolium chromophores crystal into a sol-gel SiO₂-PMMA polymer [4459-36]

Y. Chen Yang, T. Sheu, F. Tsai, Y. Tu

Experimental study of properties of two-center nonvolatile holographic recording in LiNbO₃:Cu:Ce crystals [4459-37]

Y. Liu, L. Liu, C. Zhou, D. Liu, J. Xu, L. Xu

Optically fixed photorefractive correlator [4459-38]

Y. Liu, L. Liu, D. Liu, C. Zhou, J. Xu, L. Xu

Single-beam recording and retrieving of sub-wavelength-size optical information in a photorefractive crystal using near-field scanning optical microscopy [4459-39]

K. Kim, J. Kang, B. Lee

Wavelength demultiplexing based on holographic Bragg gratings in photorefractive material [4459-40]

J. An, N. Kim, K. Lee

Mutually pumped phase conjugator using +c-face incident geometry with a 0-degree-cut pentagon-shaped BaTiO₃ crystal [4459-45]

T. Chen, C. Chang, G. Hu, H. Yau, P. Ye

Photoelectrical studies of deep levels in photorefractive CdTe:V [4459-46]

M. Tapiero, Z. Guellil

Coupled-mode analysis of volume holograms in discretized domain [4459-47]

Y. Jeong, B. Lee

SESSION 9

RECORDING MATERIALS

Two-layer structure for high spatial frequency optical data recording based on multinary chalcogenide semiconductors [4459-48]

V. Rotaru, S. Robu, I. Chapurin, G. Dragalina, O. Korshak, I. Aboudih, C. Lafond, R. Lessard

Three-dimensional two-photon imaging in polymeric materials [4459-50]

K. Belfield, K. Schafer, S. Andrasik, O. Yavuz, E. Van Stryland, D. Hagan, J. Hales

SESSION 10

HOLOGRAPHIC RECORDING APPLICATIONS

Progress in read-write fast-access volume holographic data storage [4459-52]

G. Burr, E. Mecher, T. Juchem, H. Coufal, C. Jefferson, M. Jurich, F. Gallego, K. Meerholz, N. Hampp, J. Hoffnagle, R. Macfarlane, R. Shelby

Derivation and measurement of the M/

Z. Liu, W. Liu, C. Moser, D. Zhang, I. Solomatine, D. Psaltis, A. Gorokhovskiy

Using volume holograms to search digital databases [4459-53]

G. Burr, G. Maltezos, F. Grawert, S. Kobras, H. Hanssen, H. Coufal

Optical storage in photopolymers using 3D microgratings [4459-55]

S. Orlic, C. Mueller, R. Schoen, M. Trefzer, H. Eichler

SESSION 11

RECORDING PHYSICS

Top illuminator design for 2D parallel readout in a 3D multilayer optical data storage system [4459-56]

W. Feng, E. Walker, H. Zhang, Y. Zhang, A. Dvornikov, S. Esener

Real-time adaptive encoding for 3D optical memories [4459-57]

L. Selavo, D. Chiarulli, S. Levitan

SESSION 12

FOUR-DIMENSIONAL STORAGE

First observation of ultraslow group velocity of light in a solid [4459-61]

A. Turukhin, V. Sudarshanam, J. Musser, M. Shahriar, P. Hemmer

Raman-excited spin coherences in N-V diamond [4459-62]

P. Hemmer, A. Turukhin, J. Musser, M. Shahriar

Spectral hole-burning in MgS:Eu nanoparticles [4459-64]

S. Dardona, L. Biyikli, R. Esposito, Z. Hasan

SESSION 13

POSTER SESSION

Chemically enhanced D96N-mutant bacteriorhodopsin film as an advanced optical material [4459-49]

B. Liang, B. Li, L. Jiang

Volume 4461 Linear and Non-Linear Optics of Organic Materials

SESSION 1

FUNDAMENTALS

Nonlinear molecular magneto-optics and chiral symmetries [4461-1]

S. Sioncke, T. Verbiest, A. Persoons

Chiral materials in second-order nonlinear optics [4461-2]

M. Kauranen, B. Busson, T. Verbiest, A. Persoons

Fundamental limits of susceptibilities [4461-4]

M. Kuzyk

Molecular probes for nonlinear optical imaging of biological membranes [4461-6]

M. Blanchard-Desce, L. Ventelon, S. Charier, L. Moreaux, J. Mertz

SESSION 2

MOLECULES

Thienyl-bridged oligomeric squaraines of the indole series: synthesis and optical properties [4461-7]

W. Grahn, U. Lawrentz, D. Scherer, R. Doerfler, A. Feldner, M. Schwoerer, C. Lambert, I. Dix, P. Jones

Tunability of optical nonlinear response through twisting of conjugation paths in push-pull biphenyl compounds [4461-8]

A. Boeglin, A. Fort, L. Mager, C. Combellas, A. Thiebault, V. Rodriguez

Nonlinear photoluminescence from multiwalled carbon nanotubes [4461-9]

M. Brennan, J. Coleman, M. in het Panhuis, T. Kobayashi, W. Blau

Third-order optical nonlinearities of organometallics: influence of dendritic geometry on the nonlinear properties and electrochromic switching of nonlinear absorption [4461-10]

M. Samoc, M. Humphrey, M. Cifuentes, A. McDonagh, C. Powell, G. Heath, B. Luther-Davies

Resonant and static cubic hyperpolarizabilities of push-pull dipolar and quadrupolar chromophores: toward enhanced two-photon absorption [4461-12]

M. Barzoukas, M. Blanchard-Desce

SESSION 3

MEASUREMENT TECHNIQUES

White-light-continuum spectroscopy to determine third-order nonlinear optical properties [4461-13]

U. Gubler, R. Negres, R. Martin, D. Hagan, C. Bosshard, P. Guenter, F. Diederich

Enhancing the accuracy and precision in hyper-Rayleigh scattering: frequency- and angle-resolved femtosecond nonlinear scattering [4461-14]

K. Clays, K. Wostyn, A. Persoons

Excited-state characterization of nonlinear optical materials through electrofluorescence studies

B. Canfield, M. Kuzyk

Nonlinear optical diagnostics of phase transitions in C60-TTF derivatives [4461-16]

I. Fuks-Janczarek, X. Nguyen Phu, J. Nunzi, B. Sahraoui, I. Kityk, J. Berdowski

Time-resolved electric-field-induced second harmonic [4461-17]

G. Meshulam, G. Berkovic, Z. Kotler

Polarization holography with bacteriorhodopsin [4461-18]

Y. Okada-Shudo

Absorption of polymers for optical waveguide applications measured by photothermal deflection spectroscopy [4461-19]

A. Knoesen, L. Wu

SESSION 4

POLYMERS

New developments in optical ordering of NLO dyes in polymers [4461-20]

M. Dumont

Experimental data and modeling of X(2) temporal stability of poled chromophore-doped sol-gel materials [4461-21]

H. Goudket, M. Canva, Y. Levy, F. Chaput, J. Boilot

Highly efficient and thermally stable organic/polymeric electro-optic materials by dendritic approach [4461-24]

A. Jen, H. Ma, T. Sassa, S. Liu, S. Suresh, L. Dalton, M. Haller

Remarkable optical properties of dendrimers for laser applications [4461-25]

A. Otomo, S. Otomo, S. Yokoyama, T. Nakahama, S. Mashiko

Polycyanurate ester resins with low loss and low birefringence for use in integrated optics [4461-50]

C. Dreyer, M. Bauer, J. Bauer, N. Keil, H. Yao, C. Zawadzki

Fluorescence characterization of the ternary system TMQ-PBDBD365-POPOP-dye-doped polystyrene optical fiber under gamma and UV irradiation [4461-26]

E. de la Rosa-Cruz, L. Diaz-Torres, R. Rodriguez-Rojas, G. Kumar, C. Dirk, O. Rodriguez, S. Kopecky, J. Hernandez, Y. Diaz-Torres

Copolymer and dye-doped polymer fiber and fiber preform characterization [4461-27]

R. Kruhlak, M. Kuzyk

SESSION 5

THIN FILMS

Second-order nonlinear optical responses of ionically self-assembled films: polycation variations and dianionic chromophores [4461-31]

P. Neyman, M. Guzy, S. Shah, R. Davis, K. Van Cott, H. Wang, H. Gibson, C. Brands, J. Heflin

Phase-matched second harmonic generation and nonlinear phase shift in a Langmuir-Blodgett film waveguide [4461-32]

S. Schrader, C. Fluerau, H. Motschmann, L. Brehmer

Structure and optical properties of ultrathin p-phenylene oligomer films on dielectrics [4461-34]

F. Balzer, H. Rubahn

SESSION 6

DEVICES AND PHOTONIC CRYSTALS

Model study in molecular engineering for nonlinear photonic devices: poly (arylene ethynylene) and poly (arylene vinylene) copolymers [4461-36]

K. Ryder, S. Lipson, A. Drury, S. O'Flaherty, W. Blau

Electro-optic modulators based on organic single-crystal films [4461-37]

Z. Liu, S. Sarkisov, M. Curley, A. Leyderman, J. Li, C. Lee

Time-resolved transmission through a photonic crystal in the complete Fourier domain [4461-39]

K. Clays, K. Wostyn, A. Persoons

Polymer photonic crystal slab waveguides [4461-40]

M. Eich, C. Liguda, G. Boettger, H. Roth, J. Kuhnert, W. Morgenroth, H. Elsner, H. Meyer

Polymer single-arm optical waveguide interferometer for detection of toxic industrial materials

S. Sarkisov, M. Curley, G. Adamovsky

SESSION 7

POSTER SESSION

Third-order nonlinear optical properties of copoly(2,3,5,6-tetrafluoro-1,4-phenylenevinylene-2,5-dialkoxy-1,4-phenylenevinylene)s: a novel class of

G. Farinola, T. Cassano, R. Tommasi, F. Babudri, A. Cardone, F. Naso

Design and synthesis of new acceptor molecules for photoinduced electron transfer reverse saturable absorption [4461-42]

M. Bader, T. Carvalho, H. Li, S. Tarter, C. Spangler

In-situ second harmonic generation measurements of the formation of ionically self-assembled monolayers [4461-45]

C. Brands, P. Neyman, M. Guzy, S. Shah, R. Davis, K. Van Cott, H. Wang, H. Gibson, J. Heflin

Concentration dependence of surface nonlinear susceptibility of vanadyl-porphyrin at silica surfaces [4461-46]

L. Echevarria, H. Gutierrez, V. Sosa, M. Caetano

Comparative study of the nonlinear optical surface response of metal-substituted porphyrins adsorbed on glass [4461-47]

L. Echevarria, H. Gutierrez, M. Caetano

Volume 4462 Nonlinear Optical Transmission Processes and Organic Photorefractive Materials

SESSION 1

NONLINEAR OPTICAL ABSORPTION PROCESSES

Nonlinear 3D optical storage and comments on two-photon cross section measurements [4462-2]

D. Oulianov, A. Dvornikov, P. Rentzepis

Spectral and kinetic behavior of phenylacetylene oligimers [4462-3]

D. McLean, J. Rogers, T. Cooper

Nonlinear absorption of stilbazolium derivatives [4462-5]

W. Sun, C. Lawson, G. Gray, C. Zhan, D. Wang

Multiple up-conversion emissions induced by three-photon absorption from two novel stilbazolium-like dyes containing triple conjugated bridge [4462-6]

D. Wang, C. Zhan, Y. Li, Z. Lu, Y. Nie

SESSION 2

NONLINEAR OPTICAL TRANSMISSION STUDIES

Evaluation of experimental laser-induced-damage assessment techniques for solid state nonlinear optical elements [4462-8]

B. Kimball, K. Altshuler, S. Cohen, B. DeCristofano, M. Nakashima, A. Panchangam, D. Rao, P. Wu

Transversely excited liquid crystal cells [4462-9]

G. Cook, J. Duignan, L. Taylor

Numerical simulations of solvent effects on optical transmission processes for zinc porphyrins

M. Nakashima, L. Hoke, B. Kimball, G. Kowalski, B. DeCristofano, P. Rosenof, D. Rao, D. Rao

Optical transmission processes in a thermally driven protected multi-component device [4462-11]

G. Kowalski, L. Hoke, D. Colanto, M. Nakashima, B. DeCristofano

SESSION 3

NONLINEAR OPTICAL PROCESSES

Developing photorefractive glass composites [4462-12]

J. Duignan, L. Taylor, G. Cook

Optical parametric amplifier by a narrow linewidth pulse Ti:sapphire laser on injection seeding [4462-13]

L. Wang, J. Yang, J. Zhou, L. Huang

Formation of electromagnetic shocks on optical cycle near leading front of femtosecond laser pulse [4462-14]

V. Gruzdev, A. Gruzdeva

Nonlinear self-depolarization effect of high-intensity tightly focused laser beams in transparent isotropic dielectric [4462-15]

V. Gruzdev, M. Libenson

Investigation of photorefractive nonlinear optical properties of iron-doped lithium niobate in bulk and fiber configurations [4462-17]

D. Evans, T. Pottenger, M. Saleh, S. Basun, G. Landis, T. Bunning, S. Guha

SESSION 4

MATERIALS

Organic photorefractive material design strategies [4462-18]

D. Wright, U. Gubler, S. Sadhukhan, W. Moerner, M. He, R. Twieg, M. DeClue, J. Siegel

Progress in fully functionalized organic photorefractive materials [4462-19]

M. Ng, L. Wang, W. You, L. Yu

Thermally stimulated current and electro-optic responses in stable photorefractive polymers [4462-27]

T. Aoyama, T. Sassa, H. Sasabe, T. Wada

Photorefractive polymer composites based on poly(4-vinylpyridine) [4462-33]

E. Mecher, R. Bittner, C. Braeuchle, K. Meerholz, A. Zelichenok, M. Wender, E. Vaganova, S. Yitzchaik

SESSION 5

PHOTOPHYSICS

Influence of composition on the photoconductive and photorefractive properties of PVK composites [4462-21]

O. Ostroverkhova, K. Singer

Investigation of reflectance gratings in PVK-based photorefractive polymers by photo-EMF and self-diffraction techniques [4462-22]

S. Stepanov, R. Garcia, V. Pernas, S. Mansurova, R. Bittner, K. Meerholz

Simulation of charge carrier transport in disordered molecular solids [4462-24]

J. Stephan, L. Brehmer

SESSION 6

RECENT TRENDS

Infrared-sensitive photorefractive polymer composites and fully functionalized polymethacrylates with high gain and dynamic range [4462-29]

E. Hendrickx, D. Van Steenwinckel, C. Engels, M. Schaerlaekens, E. Gubbelmans, C. Samyn, A. Persoons

Photoconductivity and charge-carrier photogeneration in photorefractive polymers [4462-30]

T. Daeubler, L. Kulikovskiy, D. Neher, V. Cimrova, J. Hummelen, E. Mecher, R. Bittner, K. Meerholz

Temperature dependent measurements on a low-molecular-weight photorefractive glass [4462-31]

R. Bausinger, A. Leopold, S. Zilker, D. Haarer, J. Ostrauskaite, M. Thelakkat

Volume 4463 Liquid Crystals V

SESSION 1

HOLOGRAPHIC AND SWITCHING ELEMENTS

[Switchable holograms for displays and telecommunications \[4463-1\]](#)

R. Sutherland, L. Natarajan, V. Tondiglia, S. Siwecki, S. Chandra, T. Bunning

[Broadening of light reflection in glassy cholesteric materials and switchable polymer-stabilized cholesteric liquid crystals \[4463-4\]](#)

M. Mitov, C. Binet, C. Bourgerette

[Optical recording of holograms in azo-polymer-stabilized nematic liquid crystals \[4463-5\]](#)

D. Dumont, T. Galstian, Y. Zhao

SESSION 2

SURFACES, NANOMATERIALS AND PERIODIC STRUCTURES

[Relaxation processes in liquid-crystal-based nanoscale heterogeneous materials \[4463-6\]](#)

F. Aliev

[Vitrifying cholesteric materials with photopolymerizable groups: synthesis and holographic applications \[4463-7\]](#)

T. Pfeuffer, P. Strohrriegl, U. Theissen, S. Zilker

[Liquid crystalline materials for spatial light modulation \[4463-8\]](#)

L. Lucchetti, D. Lucchetta, R. Karapinar, A. Manni, F. Simoni

[THz time-domain spectroscopy on 4-\(trans-4'-pentylcyclohexyl\)-benzotrinitril \[4463-9\]](#)

D. Turchinovich, P. Knobloch, G. Luessem, M. Koch

SESSION 4

INFRARED, MM-WAVE AND DISPLAY

[Polymer-stabilized ferroelectric liquid crystal for flexible displays using plastic substrates \[4463-15\]](#)

H. Fujikake, T. Murashige, H. Sato, Y. Iino, H. Kikuchi, M. Kawakita, Y. Tsuchiya

[Application of nematic liquid crystals to quasi-optical millimeter-wave devices \[4463-16\]](#)

M. Tanaka, S. Sato

[Communication-wavelength \(1.55 \$\mu\text{m}\$ \) laser-induced refractive index change in nematic liquid crystalline films \[4463-18\]](#)

I. Khoo, M. Kaczmarek, M. Shih, A. Shishido, J. Ding, Y. Zhang, M. Wood

SESSION 5

NOVEL LIQUID CRYSTALLINE STUDIES

[Design and applications of new fluorinated liquid crystals of fused ring systems for active matrix LCD \[4463-19\]](#)

H. Takatsu, S. Takehara, K. Takeuchi, Y. Iwashita

[Optical equivalence theorem for liquid crystal layers: principles and applications \[4463-22\]](#)

H. Kwok, S. Tang

SESSION 6

NOVEL LIQUID CRYSTAL OPTICAL ELEMENTS

Optical birefringent film by photoreactive high- and low-molecular liquid crystal composites [4463-23]

N. Kawatsuki, T. Sakai, A. Xing, T. Hasegawa, T. Yamamoto

New photo-aligning and photo-patterning technology: superthin internal polarizers, retarders, and aligning layers [4463-24]

V. Chigrinov, H. Kwok, W. Yip, V. Kozenkov, E. Prudnikova, B. Tang, F. Salhi

Liquid crystalline light-emitting thermally stable readily processable substituted polyacetylenes

B. Tang, J. Lam, J. Luo, Y. Dong, K. Cheuk, Z. Xie, H. Kwok

Characterization of optical and mechanical modification of surface alignment layers for liquid crystal devices [4463-26]

T. Furtak, T. Copp, B. Chow

Nonlinear liquid crystals in periodic structures [4463-27]

A. Shishido, I. Divliansky, S. Nishimura, Y. Zhang, J. Patel, T. Mallouk, T. Mayer, I. Khoo

SESSION 7

POSTER SESSION

Molecular orientation and converging properties simulation of liquid crystal microlenses by using 3D-FDM [4463-29]

S. Yanase, M. Ye, K. Ouchi, S. Sato

Electro-optical characteristics in the in-plane switching of nematic liquid crystals [4463-30]

V. Reshetnyak, O. Shevchuk

Photochemical phase transition behavior of liquid crystals in the presence of nonmesogenic molecules [4463-31]

J. Sung, O. Tsutsumi, A. Kanazawa, T. Shiono, T. Ikeda

Reflection of multidomain structured cholesteric liquid crystals [4463-32]

C. Bohley, T. Scharf, R. Klappert, J. Grupp

Characterization of PDLCs composed of the single liquid crystal component, K21, in a thiol-ene-based polymer [4463-34]

J. Whitehead, N. Gill

Volume 4464 Organic Light Emitting Materials and Devices V

SESSION 1

ACTIVE MATRIX ORGANIC EMISSIVE DISPLAYS

Full color OLED on silicon microdisplay [4464-1]

A. Ghosh

Technology and design of an active-matrix OLED on crystalline silicon direct-view display for a wristwatch computer [4464-2]

J. Sanford, E. Schlig, O. Prache, D. Dove, T. Ali, W. Howard

SESSION 2

FLEXIBLE ORGANIC LIGHT-EMITTING DEVICES

Building blocks for ultra-thin flexible organic Electroluminescent devices [4464-3]

E. Guenther, R. Kumar, F. Zhu, H. Low, K. Ong, M. Auch, K. Zhang, S. Chua

High performance flexible polymer light-emitting diodes fabricated via a low-temperature plastic laminated process [4464-4]

T. Guo, S. Chang, S. Pyo, Y. Yang

SESSION 3

POLYMERIC LIGHT-EMITTING MATERIALS AND DEVICES

New family of polyfluorene copolymers for light emitting devices [4464-7]

A. Holmes, T. Sano, C. Fischmeister, J. Frey, U. Hennecke, C. Tuan, B. Chuah, Y. Ma, R. Martin, I. Rees, J. Li, N. Feeder, A. Bond, F. Cacialli, S. Lim, R. Friend

Developments in polymer materials for electroluminescence [4464-8]

H. Becker, A. Buesing, A. Falcou, S. Heun, E. Kluge, A. Parham, P. Stoessel, H. Spreitzer, K. Treacher, H. Vestweber

SESSION 4

FABRICATION TECHNIQUES FOR POLYMER EMISSIVE DISPLAYS

Ink-jet printing of polymer light-emitting devices [4464-10]

P. Duineveld, M. de Kok, M. Buechel, A. Sempel, K. Mutsaers, P. van de Weijer, I. Camps, T. van de Biggelaar, J. Rubingh, E. Haskal

Screen-printed passive matrix displays and multicolor devices [4464-11]

J. Birnstock, J. Blaessing, A. Hunze, M. Scheffel, M. Stoessel, K. Heuser, J. Woerle, G. Wittmann, A. Winnacker

SESSION 5

ORGANIC ELECTROLUMINESCENT DEVICES WITH NOVEL AND MODIFIED ELECTRODES

Highly oriented indium tin oxide thin films for organic light-emitting diodes [4464-59]

H. Kim, J. Horwitz, W. Kim, Z. Kafafi, D. Chrisey

Molecular organic light-emitting diodes using highly conductive and transparent polymeric anodes [4464-66]

W. Kim, A. Makinen, N. Nikolav, R. Shashidhar, H. Kim, Z. Kafafi

Cathodes incorporating thin fluoride layers for efficient injection in blue polymer light-emitting diodes [4464-14]

T. Brown, I. Millard, D. Lacey, J. Burroughes, R. Friend, F. Cacialli

Sol-gel-deposited Sb-doped SnO₂ as transparent anode for OLED: process, patterning, and hole injection characteristics [4464-15]

D. Vaufrey, M. Ben Khelifa, M. Besland, C. Sandu, M. Blanchin, V. Teodorescu, J. Roger, J. Tardy

SESSION 6

SPECTROSCOPIC STUDIES AND ELECTRICAL PROBES OF ORGANIC LIGHT-EMITTING STRUCTURES

Electroluminescence and electrically detected magnetic resonance studies of spin 1/2 polaron and singlet exciton dynamics in multilayer small molecular organic light-emitting devices [4464-16]

G. Li, J. Shinar

Circularly polarized emission from dyes embedded in a chiral polymer [4464-17]

K. Bjorknas, P. Raynes, S. Gilmour

Energy transfer and fluorescence depolarization in organic dendrimers and branched molecules

O. Varnavski, J. Ostrowski, G. Bazan, T. Goodson

Charge-based deep level transient spectroscopy of poly(p phenylene vinylene) light-emitting diodes [4464-19]

T. Nguyen, P. Le Rendu, O. Gaudin, R. Jackman

Conduction and degradation analysis of organic LEDs by current noise monitoring [4464-20]

G. Ferrari, D. Natali, M. Sampietro, F. Wenzl, U. Scherf, C. Schmitt, R. Guentner, G. Leising

SESSION 7

ELECTROLUMINESCENCE AND PHOTOEMISSION STUDIES OF ORGANIC PHOSPHORS

Photoemission studies of organic phosphors doped in electron and hole transport hosts [4464-23]

A. Maekinen, I. Hill, Z. Kafafi

SESSION 8

ELECTRONIC STRUCTURE OF ORGANIC INTERFACES

Electronic structure and localized states in starburst trisphenylquinoxaline [4464-24]

S. Schrader, M. Casu, P. Imperia, M. Jandke, P. Strohsriegl

Hole injection energetics at highly conducting polymer anode: small molecule interfaces studied with photoemission spectroscopy [4464-26]

A. Maekinen, W. Kim, I. Hill, R. Shashidhar, N. Nikolov, Z. Kafafi

SESSION 9

COMBINATORIAL AND DEVICE OPTIMIZATION APPROACHES

Combinatorial device fabrication and optimization of multilayer organic LEDs [4464-28]

T. Beierlein, H. Ott, H. Hofmann, H. Riel, B. Ruhstaller, B. Crone, S. Karg, W. Riess

External coupling and cathode effects in organic light-emitting devices: modeling and experiments [4464-29]

M. Lu, J. Sturm

Combinatorial fabrication and studies of 4,4'-bis(9-carbazolyl) biphenyl (CBP)-based UV-violet OLED arrays [4464-65]

L. Zou, V. Savvate'ev, J. Booher, C. Kim, J. Shinar

SESSION 10

DEVELOPMENT OF NOVEL CHARGE TRANSPORT MATERIALS AND THEIR APPLICATION IN DEVICES

Development of hole-blocking amorphous molecular materials and their application in organic light-emitting diodes [4464-31]

Y. Shirota, M. Kinoshita, K. Okumoto

Balancing electron and hole currents in single layer poly(9,9-dioctylfluorene) light-emitting diodes [4464-33]

A. Campbell, H. Antoniadis, T. Virgili, D. Lidzey, X. Wang, D. Bradley

Field-dependent mobility evaluation from steady-state space-charge-limited I-V curves [4464-35]

D. Natali, M. Sampietro

SESSION 11

POSTER/DEMO SESSION - MONDAY

Interfaces between poly (9,9-dioctylfluorene) and alkali metals as affected by molecular weight and oxygen [4464-36]

M. Fung, S. Lai, S. Bao, C. Lee, J. O'Brien, M. Inbasekaran, W. Wu, S. Lee

Enhanced brightness in organic light-emitting diodes using a carbon nanotube composite as an electron-transport layer [4464-38]

P. Fournet, J. Coleman, D. O'Brien, B. Lahr, A. Drury, H. Hoerhold, W. Blau

Electroluminescence as a probe for electrical and optical properties of deoxyribonucleic acid [4464-41]

T. Koyama, Y. Kawabe, N. Ogata

Simulation of low-field mobility in inhomogeneous organic solids including charge carrier correlation effects [4464-42]

J. Stephan, A. Liemant, S. Schrader, F. Albrecht, L. Brehmer

Blue light-emitting devices based on glassy tetraphenylsilane molecular materials [4464-43]

L. Chan, H. Yeh, C. Chen

Surface treatments of indium-tin-oxide substrates: comprehensive investigation of mechanical, chemical, thermal, and plasma treatments [4464-47]

A. Djuricic, T. Lau, C. Kwong, W. Guo, Y. Bai, E. Li, W. Chan

Electroluminescent properties of light-emitting diodes based on 9,9-bis[4-(diarylaminophenyl)]fluorene derivatives [4464-49]

C. Ko, Y. Tao

Electroluminescence of bipolar tetraphenylmethane-based molecular materials [4464-50]

R. Lee, H. Yeh, C. Chen

Synthesis and luminescent properties of novel soluble quinacridones [4464-52]

P. Liu, C. Chang, H. Tian

Light-emitting carbazole derivatives for electroluminescent materials [4464-53]

J. Lin, K. Thomas, Y. Tao, C. Ko

MEH-PPV and thianthrene-containing PPV-derivatives as efficient polymeric materials for solid-state lasers [4464-54]

H. Hoerhold, H. Tillmann, C. Bader, E. Klemm, W. Holzer, A. Penzkofer

Air-stable organic polymer red light-emitting devices on flexible plastic substrates [4464-56]

Y. Hong, Z. He, S. Lee, J. Kanicki

Novel bright small molecular white OLEDs [4464-57]

C. Kim, J. Shinar

Optical characterization of OLED displays with touch screens [4464-58]

A. Cropper, R. Feldman, M. Siwinski, K. Kilmer

Electronic defect characteristics of pentacene organic thin films deposited on SiO₂/Si substrates

Y. Yang, S. Kim, J. Lee, H. Chu, L. Do, H. Lee, J. Oh, J. Lee, T. Zyung, M. Ryu, M. Jang

Red luminescence of novel naphthalamides in solid state [4464-63]

J. Gan, H. Tian, Q. Wang, K. Chen

Low voltage organic light-emitting diodes by doped amorphous hole transport layers [4464-64]

J. Blochwitz, M. Pfeiffer, X. Zhou, A. Werner, M. Hofmann, K. Leo

Characterization of the chemistry that occurs at the Alq₃/Alkali metal halide heterointerface using quantum chemical analyses [4464-13]

G. Kushto, Z. Kafafi

RGB emission using a dimesitylboryl-bithiophene derivative as a universal host and pentacene derivatives as the red emitters [4464-68]

L. Picciolo, H. Murata, A. Gondarenko, T. Noda, Y. Shirota, D. Eaton, J. Anthony, Z. Kafafi

Volume 4465 Organic Photovoltaics II

SESSION 1

SOLID STATE ORGANIC PHOTOVOLTAICS: EFFICIENCY AND STABILITY

Inorganic benchmarks for organic solar cells: considerations of efficiency, stability, and cost [4465-1]

D. Faiman

Flexible solid-state dye solar cells [4465-2]

T. Meyer, A. Meyer, D. Ginestoux

Solid-state and flexible solar cells based on dye-sensitized TiO₂: study by electrochemical impedance spectroscopy [4465-4]

C. Longo, F. Nogueira, H. Cachet, M. De Paoli

SESSION 2

ROLES OF INTERFACES IN ORGANIC SOLAR CELLS

Interfacial processes in organic-based solar cells [4465-6]

B. Gregg, S. Ferrere, F. Pichot

Theoretical analysis of composite polymer solar cell function [4465-8]

V. Aroutiounian, H. Tributsch

SESSION 3

DYNAMICS OF CHARGE PHOTOGENERATION IN POLYMER BLENDS

Mechanism of carrier photoexcitation in semiconducting polymers: the role of electron photoemission in photoconductivity measurements [4465-9]

D. Moses, P. Miranda, C. Soci, A. Heeger

Light-assisted tunneling current spectroscopy: a new tool for nanoscale observation of organic semiconductors [4465-10]

F. Charra, D. Fichou

SESSION 4

SELF-ASSEMBLY AND HYBRID SYSTEMS

Time-resolved photoelectrochemical measurements and photovoltaic efficiency of electrochemically self-assembled ZnO-dye electrodes [4465-13]

D. Schlettwein, T. Oekermann, Y. Tsukasa, T. Sugiura, H. Minoura, D. Woehrlé

Hybrid polymer-based photovoltaics via carbon nanotubes and electrostatic self-assembly [4465-15]

E. Donaldson, M. Durstock, B. Taylor, D. Tomlin, L. Richardson, J. Baur

Electron losses in nanostructured anatase using transient absorption spectroscopy [4465-16]

H. van't Spijker, A. Goossens

SESSION 5

POSTER SESSION

Photocurrent spectra of bilayers and blends of the organic donor-acceptor system CuPc/C60 [4465-17]

T. Stuebinger, W. Bruetting

Photodoping of zinc phthalocyanine: formation, transport and activity of ionized oxygen in phthalocyanine solar cells [4465-18]

C. Huisman, A. Goossens, J. Schoonman

Design and synthesis of novel block copolymers for efficient optoelectronic applications [4465-22]

S. Sun, Z. Fan, Y. Wang, C. Taft, J. Haliburton, S. Maaref

Infrared spectroscopic investigations of organic polymeric photovoltaic systems [4465-23]

H. Neugebauer, C. Brabec, A. Cravino, T. Yohannes, P. Denk, S. Luzzati, M. Catellani, N. Sariciftci

Charge transport under illumination in mesoporous continuous films [4465-25]

J. Garcia-Macedo, D. Cruz, G. Valverde, J. Zink, R. Hernandez, P. Minoofar

High efficient cyanine dyes used for nanocrystalline TiO₂ electrode sensitization [4465-26]

F. Meng, Y. Ren, E. Gao, S. Cai, K. Chen, H. Tian

Volume 4466 Organic Field Effect Transistors

SESSION 1

DEVICE PHYSICS, INTERFACES, AND SURFACES

Photoemission characterization of interfaces between Au and pentacene [4466-2]

N. Watkins, Q. Le, S. Zorba, L. Yan, Y. Gao, S. Nelson, C. Kuo, T. Jackson

Influence of the gate dielectric on the morphological and electronic structure of pentacene films for transistor applications [4466-5]

D. Knipp, R. Street, B. Krusor, R. Apte, J. Ho

SESSION 2

MATERIALS

Design of organic transistor semiconductors for logic elements, displays, and sensors [4466-6]

H. Katz, A. Lovinger, X. Hong, A. Dodabalapur, J. Johnson, B. Wang, K. Raghavachari

Novel organic and polymeric semiconductors for plastic electronics [4466-7]

Z. Bao, A. Dodabalapur, H. Schon, J. Rogers, H. Katz, A. Lovinger, C. Kloc, B. Batlogg, B. Crone, K. Baldwin, V. Kuck, V. Raju, P. Wiltzius, E. Reichmanis, E. Chandross, K. Amundson, J. Ewing, P. Drzaic

Ultrathin organic films for field effect transistors [4466-9]

H. Sandberg, O. Henze, H. Sirringhaus, A. Kilbinger, W. Feast, R. Friend

SESSION 3

NOVEL DEVICES AND SELF-ASSEMBLY

Self-organizing molecular semiconductor: materials and carrier transport properties [4466-11]

J. Hanna

Improved organic thin film transistor performance using chemically modified gate dielectrics [4466-13]

D. Gundlach, C. Kuo, C. Sheraw, J. Nichols, T. Jackson

SESSION 4

NEW PATTERNING METHODS AND TRANSPORT MECHANISMS

Band gap and charge carrier wavefunction in organic semiconductors [4466-14]

M. Knupfer, H. Peisert, T. Schwieger, J. Fink, D. Fichou

Screen printing for the fabrication of organic light-emitting devices [4466-15]

G. Jabbour, R. Radspinner, N. Peyghambarian

All-polymer thin film transistors fabricated by inkjet printing [4466-16]

T. Kawase, H. Sirringhaus, R. Friend, T. Shimoda

Screen printed organic thin film transistors (OTFTs) on a flexible substrate [4466-17]

C. Gray, J. Wang, G. Duthaler, A. Ritenour, P. Drzaic

Dynamic and lifetime measurements of polymer OFETs and integrated plastic circuits [4466-18]

J. Ficker, A. Ullmann, W. Fix, H. Rost, W. Clemens

Volume 4467 Complex Mediums II: Beyond Linear Isotropic Dielectrics

SESSION 1

INAUGURAL SESSION

[Electromagnetic metamaterials \[4467-1\]](#)

R. Walser

SESSION 2

CONSTITUTIVE RELATIONS I

[Complex media of ferroelectric and related materials \[4467-2\]](#)

C. Randall, I. Reaney

[Polarimetry of electromagnetic materials \[4467-3\]](#)

T. Asahi, T. Osaka, J. Kobayashi

SESSION 3

PROPAGATION

[Mobile radio channel as a complex medium \[4467-4\]](#)

D. Matic, R. Prasad, D. Kalluri

[High-order effects in the scattering of light due to plasmon polariton excitation on metal surfaces](#)

K. O'Donnell

[Elastic orthonormal beams and localized fields with applications to control laser radiation \[4467-6\]](#)

G. Borzdov

[Properties of cavity-backed patch antennas with homogeneous and inhomogeneous ferromagnetic, bianisotropic, and chiral substrates \[4467-7\]](#)

L. Vegni, F. Bilotti, A. Toscano

[Energy relations for electromagnetic waves in a time-varying magnetoplasma medium \[4467-8\]](#)

M. Bakunov, I. Grachev

SESSION 4

THIN FILMS

[Thin film morphology at low adatom mobility \[4467-9\]](#)

R. Knepper, R. Messier

[Automobile applications of optical thin films modified by nanotechnology \[4467-10\]](#)

Y. Taga, M. Suzuki

[Sculptured-thin-film optoelectronics \[4467-11\]](#)

M. McCall

[Microscopic model for static and dynamic loading of chiral sculptured thin films \[4467-12\]](#)

A. Lakhtakia

[Nanostructures in oxide thin films: dots, wires, and rings \[4467-13\]](#)

M. Lippmaa, K. Terai, N. Nakagawa, K. Shibuya, M. Kawasaki, H. Koinuma

SESSION 5
MAGNETIC EFFECTS

Magneto-optics: a critical review [4467-14]

A. Boardman, M. Xie

Static and dynamic magnetoelasticity [4467-15]

G. Dewar

Magnetism-based sensors [4467-16]

K. Ong, M. Jain, C. Mungle, S. Schmidt, C. Grimes

SESSION 6
SCATTERING

Statistical approaches to scattering [4467-17]

W. Tabbara

Rigorous coupled-wave approach to scattering from cylindrical and spherical inhomogeneous objects [4467-18]

J. Jarem

Fields induced in inhomogeneous spheres by external sources: the scalar case [4467-19]

G. Kokkorakis, J. Fikioris, G. Fikioris

SESSION 7
COMPOSITE MATERIALS

Local fields and optical properties of metal-dielectric films [4467-20]

A. Sarychev, V. Shalaev

Plasmon-enhanced absorption by optical phonons in cermets [4467-21]

M. Gadenne, P. Gadenne, V. Podolskiy, P. Sheng, V. Shalaev

Macroscopic models for short-period crystals: boundary effects [4467-22]

S. Ponti, C. Oldano

Strong property fluctuation theory applied to the homogenization of linear bianisotropic composites [4467-23]

T. MacKay, A. Lakhtakia, W. Weiglhofer

Polarization-sensitive microwave band gaps in array structures [4467-24]

S. Zouhdi, A. Fourier-Lamer, S. Prosvirnin, S. Tretyakov, T. Kharina, H. Jallageas

Resonance reflection properties of dipole grids near ideally conducting planes [4467-25]

P. Belov, S. Tretyakov

SESSION 8
NONLINEAR MATERIALS

Nonlinear optics using semiconductor quantum wells [4467-27]

J. Arnold

Measurement and analysis of optical nonlinearities of nematic liquid crystals [4467-28]

L. Pea, P. Banerjee

Localized plasmon enhanced optical response: harmonic generation and polarization effects [4467-29]

P. Gadenne, B. Berini, S. Buil, X. Quelin, C. Anceau, S. Gresillon, S. Ducourtieux, J. Rivoal, M. Breit, A. Bourdon, A. Sarychev, V. Shalaev

Nonlinearities in energy harvesting media [4467-30]

D. Andrews, R. Jenkins

SESSION 9

CONSTITUTIVE RELATIONS II

Complex mediums education [4467-31]

D. Kalluri

Point group symmetries [4467-32]

D. Litvin

Constitutive relations in inhomogenous systems and the particle field conundrum [4467-33]

D. Censor

SESSION 10

POSTER SESSION

Orientation and form of the ellipse polarization of laser beam dependence on direction in quartz

I. Bodnar

Temperature dependence of refractive indices of LiNbO₃, LiTaO₃ and (Ba,Nb)NbO₃ relative crystals: similarity and difference [4467-39]

I. Bodnar, V. Yarunichev

Silicon carbon nitride films as new materials obtained by plasma chemical vapor deposition from novel precursor [4467-40]

T. Smirnova, A. Shmakov, A. Badalian, V. Kaichev, V. Bukhtiyarov, V. Rachlin, A. Fomina

Plasmon resonance of copper nanoparticles within zeolites: the effect of matrix composition and agglomeration temperature [4467-41]

V. Petranovskii, V. Gurin, J. Tamariz Flores

Structural formation of the lead zirconate titanate formed in pulsed-laser ablation deposition [4467-42]

M. Ichiki, L. Zhang, Z. Wang, Y. Morikawa, M. Tanaka, R. Maeda

Volume 4468 Engineering Thin Films with Ion Beams, Nanoscale Diagnostics, and Molecular Manufacturing

SESSION 1

Ion beam modification of perpendicular magnetic anisotropy in (Co/Pt)_n multilayers and FePt thin films [4468-2]

J. Baglin, C. Rettner, B. Terris, D. Weller, J. Thiele, A. Kellock, S. Anders, T. Thomson

Metal oxide films with magnetically modulated nanoporous architectures [4468-3]

C. Grimes, R. Singh, E. Dickey, O. Varghese

Ion beam nanosmoothing of sapphire and silicon carbide surfaces [4468-4]

D. Fenner, V. DiFilippo, J. Bennett, T. Tetreault, J. Hirvonen, L. Feldman

SESSION 2

Time-resolved studies of photoluminescence from proton irradiated and thermally annealed a-SiC:H alloys [4468-5]

P. Baeri, A. Malvezzi, R. Reitano

Highly charged ion-secondary ion mass spectrometry (HCI-SIMS): toward metrology solutions for sub-100-nm technology nodes [4468-6]

T. Schenkel, A. Kraemer, K. Leung, A. Hamza, J. McDonald, D. Schneider, A. Kraemer

Structural analysis of chalcogenide waveguides using Rutherford backscattering spectroscopy (RBS) [4468-7]

C. Rivero, P. Sharek, G. Nootz, C. Lopez, K. Richardson, A. Schulte, R. Irwin, T. Galstian, V. Hamel, K. Turcotte, A. Villeneuve, R. Valee

In-line methods of optical diagnostics in the field of standardization and metrology [4468-8]

B. Constantinov, S. Sircu

SESSION 3

Forensic applications of ion-beam mixing and surface spectroscopy of latent fingerprints [4468-9]

C. Koch, M. Augustine, H. Marcus

Mass-transport driven by atomic relocations under high-flux ion irradiation at elevated temperatures [4468-10]

L. Pranevicius, J. Dudonis, C. Templier, J. Riviere

Low-energy ion implantation-induced control of InP-based heterostructure properties [4468-11]

V. Aimez, J. Beauvais, D. Drouin, J. Beerens, D. Morris, S. Jandl

Magnesium film implanted with vanadium ions for hydrogen storage [4468-12]

A. Leon, E. Knystautas, J. Huot, R. Schulz

SESSION 4

Purification and processing of carbon nanotubes using self-assembly and selective interaction with a semiconjugated polymer [4468-13]

P. Fournet, B. McCarthy, A. Dalton, J. Coleman, R. Murphy, C. Stephan, S. Lefrant, P. Bernier, H. Byrne, W. Blau

In-situ biaxial texture analysis of MgO films during growth on amorphous substrates by ion-beam-assisted deposition [4468-14]

R. Brewer, P. Arendt, J. Groves, H. Atwater

Effects of nitrogen plasma immersion ion implantation in silicon [4468-16]

R. Kumar, M. Kumar, P. George, K. Chari, S. Mukherjee

SESSION 5

Nanoscale-level dielectric property image of low-k dielectric materials for copper metallization using energy-filtered TEM [4468-18]

S. Lo, F. Chen, J. Kai, L. Chen, L. Chang, C. Chiang, P. Ding, B. Chin, F. Chen

Using scanning probe microscopy and nanometer surface profiler of DEDTAK for determination of thermal stress in quasi-monolithic integration technology (QMIT) [4468-19]

M. Joodaki, T. Senyildiz, G. Kompa, R. Kassing, H. Hillmer

Dual-fiber optic microcantilever proximity sensor [4468-20]

S. Goedeke, S. Allison, R. Farahi, S. Rajic, P. Datskos

SESSION 6

POSTER SESSION

Detection of metal fatigue by laser-instigated thermal vibration [4468-23]

A. Mori, S. Iwasa, K. Suzuki

Electrostatic self-assembly processing of functional nanocomposites [4468-25]

J. Mecham, K. Cooper, K. Huie, R. Claus

Volume 4469 Raman Spectroscopy and Light Scattering Technologies in Materials Science

SESSION 1

POLYMERS AND LIQUID CRYSTALS

[Raman mapping of plasma-treated and grafted polymer surfaces \[4469-1\]](#)

P. Fredericks, I. Keen, L. Rintoul

[Raman spectroscopic study of phase transitions and configurations in ester ferroelectric liquid crystals \[4469-3\]](#)

Z. Yin, P. Zhang, M. Zhang

SESSION 2

MOLECULAR APPLICATIONS

[Mixed quartic-harmonic oscillators: a study of the ring puckering vibration of a cyclic amino acid dimer \[4469-5\]](#)

R. Withnall, D. Andrews, A. Mendham, B. Chowdhry

[Determination of the length of zigzag chain molecules from Raman spectra \[4469-6\]](#)

V. Gorelik, S. Verjaskin, P. Sverbil, A. Chervyakov, L. Zlobina, O. Sharts

SESSION 3

SOLID STATE APPLICATIONS

[Recent advances in Raman scattering studies of exhaust-gas catalysts \[4469-8\]](#)

W. Weber, D. Uy

[Use of a high-dispersion spectrograph for optimized visible and UV Raman measurements on semiconductor materials \[4469-9\]](#)

A. Whitley, F. Adar, S. Morel, M. Moreau, N. Klymko

[Raman characterization of Te inclusions on CdTe surfaces using visible lasers \[4469-11\]](#)

J. Soares, C. do Carmo

[Demonstration of a high-precision optical probe for effective sampling of solids by Raman spectroscopy \[4469-12\]](#)

B. Marquardt, T. Le, L. Burgess

SESSION 4

NANOTECHNOLOGY

[Nanocrystalline sol-gel prepared titania films by Raman, FTIR, XRD, and atomic force microscopy](#)

Y. Djaoued, S. Badilescu, P. Ashrit, D. Bersani, P. Lottici, J. Robichaud

[Raman spectroscopic investigation of reactively sputtered silver oxide layers: a ready-made silver nanocluster precursor for optical plasmon generation \[4469-14\]](#)

D. Buechel, C. Mihalcea, N. Atoda, J. Tominaga

[Phonon confinement and optical properties in nanosized titanium dioxide by Raman spectroscopy \[4469-16\]](#)

M. Zhang, W. Zhang, Z. Yin