

Nonlinear guided waves  
Preface

0.6V threshold voltage thin film transistors with solution processable indium oxide ( $\text{In}_2\text{O}_3$ ) Channel and Anodized High-k  $\text{Al}_2\text{O}_3$  Dielectric

10 kA Joints for HTS Roebel Cables

3-D mechanical modeling of 20 T HTS clover leaf end coils - Good practices and lessons learned

3-D Numerical Modeling of AC Losses in Multifilamentary MgB<sub>2</sub> Wires

3GPP LTE-assisted Wi-Fi-direct  
Trial implementation of live D2D technology

A 0.5-6MHz Active-RC LPF with Fine Gain Steps Using Binary Interpolated Resistor Banks

Absorption profile and femtosecond intraband relaxation of the intense upper Davydov component in oligothiophenes

Accelerator-quality HTS dipole magnet demonstrator designs for the EuCARD-2 5-T 40-mm clear aperture magnet

Adaptive multiresolution method for MAP reconstruction in electron tomography

A Database for Storing Magnet Parameters and Analysis of Quench Test Results in HL-LHC Nb<sub>3</sub>Sn Short Model Magnets

Adsorption and dissociation of molecular oxygen on  $\alpha$ -Pu (0 2 0) surface  
A density functional study

A Fast Quench Protection System for High-Temperature Superconducting Magnets

A Finite Element Simulation Tool for Predicting Hysteresis Losses in Superconductors Using an H-Oriented Formulation with Cohomology Basis Functions

AlGaAs/AlGaInP VECSELs with Direct Emission at 740-770 nm

Ambient-Pressure XPS Study of a Ni-Fe Electrocatalyst for the Oxygen Evolution Reaction

An ab initio study of  $\text{PuO}_{2\pm 0.25}$ ,  $\text{UO}_{2\pm 0.25}$ , and  $\text{U}_{0.5}\text{Pu}_{0.5}\text{O}_{2\pm 0.25}$

Analysis of uncertainties in protection heater delay time measurements and simulations in Nb<sub>3</sub>Sn high-field accelerator magnets

Analytical and Numerical Methods to Estimate the Effective Mechanical Properties of Rutherford Cables

Analytical computation of the demagnetizing energy of thin-film domain walls

A near-infrared optoelectronic approach to detection of road conditions

A new power-consumption optimization technique for two-stage operational amplifiers

An integrated "sense-and-communicate" broad-/narrow-band optically controlled reconfigurable antenna for cognitive radio systems

Anisotropic and strain-dependent model of magnetostriction in electrical steel sheets

An Optical Sensor for Volatile Amines Based on an Inkjet-Printed, Hydrogen-Bonded, Cholesteric Liquid Crystalline Film

A Novel Enhanced-Performance Flexible RFID-Enabled Embroidered Wireless Integrated Module for Sensing Applications

Architectures and codecs for real-time light field streaming

Are coarse-grained models apt to detect protein thermal stability? the case of OPEP force field

Aryl end-capped quaterthiophenes applied as anode interfacial layers in inverted organic solar cells

A study of electric transport in n- and p-type modulation-doped GaInNAs/GaAs quantum well structures under a high electric field

Better understanding of the role of  $\text{SiO}_2$ ,  $\text{P}_2\text{O}_5$  and  $\text{Al}_2\text{O}_3$  on the spectroscopic properties of  $\text{Yb}^{3+}$  doped silica sol-gel glasses

Block copolymer lithography  
Feature size control and extension by an over-etch technique

Boron delta-doping dependence on Si/SiGe resonant interband tunneling diodes grown by chemical vapor deposition

Bringing High-Performance GaInNAsSb/GaAs SOAs to True Data Applications

Broadband finite-Difference Time-Domain modeling of plasmonic organic photovoltaics

Bursty magnetic friction between polycrystalline thin films with domain walls

Calculated electronic density of states and structural properties of tetrahedral amorphous carbon

Calculation of the scalar diffraction field from curved surfaces by decomposing the three-dimensional field into a sum of Gaussian beams

Capability assessment of inkjet printing for reliable RFID applications

Cascaded crystalline raman lasers for extended wavelength coverage  
Continuous-wave, third-stokes operation

Catalytic Activity of AuCu Clusters on MgO(100)  
Effect of Alloy Composition for CO Oxidation

Cavity formation in split ring resonators

Chip-by-chip configurable interconnection using digital printing techniques

Cold test results of the LARP HQ Nb<sub>3</sub>Sn quadrupole magnet at 1.9 K

Combination of E-jet and inkjet printing for additive fabrication of multilayer high-density RDL of silicon interposer

Comparative Analysis of Injection Microdisk Lasers Based on InGaAsN Quantum Wells and InAs/InGaAs Quantum Dots

Comparison of the optical, thermal and structural properties of Ge-Sb-S thin films deposited using thermal evaporation and pulsed laser deposition techniques

Comparison of three light doses in the photodynamic treatment of actinic keratosis using mathematical modeling

Compatibilization of natural rubber/nitrile rubber blends by sol-gel nano-silica generated by in situ method

Composition dependent growth dynamics in molecular beam epitaxy of GaInNAs solar cells

Computational super-resolution phase retrieval from multiple phase-coded diffraction patterns  
Simulation study and experiments

Computation of torque of an electrical machine with different types of finite element mesh in the air gap

Considerations on a Cost Model for High-Field Dipole Arc Magnets for FCC

Construction of an Interconnected Nanostructured Carbon Black Network  
Development of Highly Stretchable and Robust Elastomeric Conductors

Controlling the plasmon resonance via epsilon-near-zero multilayer metamaterials

Crystallization of supercooled liquid antimony  
A density functional study

Crystallization processes in the phase change material Ge<sub>2</sub> Sb<sub>2</sub> Te<sub>5</sub>  
Unbiased density functional/molecular dynamics simulations

Cysteine-tagged chimeric avidin forms high binding capacity layers directly on gold

Decreasing the extremely low-frequency electric field exposure with a Faraday cage during work tasks from a man hoist at a 400 kV substation

Deformation of lamellar  $\gamma$ -TiAl below the general yield stress

Demonstration of optical nonlinearity in InGaAsP/InP passive waveguides

Design, fabrication, and testing of a low AC-loss conduction-cooled cryostat for magnetization loss measurement apparatus

Designing materials with desired electromagnetic properties

Design of a Nb<sub>3</sub>Sn 400 T/m quadrupole for the Future Circular Collider

Detection of 3,4-methylenedioxyamphetamine (MDMA, ecstasy) by displacement of antibodies

Determination of beam incidence conditions based on the analysis of laser interference patterns

Development of a new illumination procedure for photodynamic therapy of the abdominal cavity

Development of MQXF  
The Nb<sub>3</sub>Sn Low-β Quadrupole for the HiLumi LHC

Diffusion on aluminum-cluster surfaces and the cluster growth

Dilute nitride triple junction solar cells for space applications  
Progress towards highest AM0 efficiency

Direct measurement of vapour-metal shifts in photo- and Auger electron spectra of Zn and Cd

Dissolution behavior of the bioactive glass S53P4 when sodium is replaced by potassium, and calcium with magnesium or strontium

Dynamics of photovoltaic-generator-interfacing voltage-controlled buck power stage

Dynamic speckle analysis with smoothed intensity-based activity maps

Effect of heat-treatment on the upconversion of NaYF<sub>4</sub>:Yb<sup>3+</sup>, Er<sup>3+</sup> nanocrystals containing silver phosphate glass

Effect of Hole Transporting Material on Charge Transfer Processes in Zinc Phthalocyanine Sensitized ZnO Nanorods

Effect of incorporation of CdS NPs on performance of PTB7  
PCBM organic solar cells

Effect of sol-gel derived in situ silica on the morphology and mechanical behavior of natural rubber and acrylonitrile butadiene rubber blends

Effect of the addition of Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and ZnO on the thermal, structural and luminescence properties of Er<sup>3+</sup>-doped phosphate glasses

Effect of the glass melting condition on the processing of phosphate-based glass-ceramics with persistent luminescence properties

Effects of insertion of strain-engineering Ga(In)NAs layers on optical properties of InAs/GaAs quantum dots for high-efficiency solar cells

Effects of thinning and heating for TiO<sub>2</sub>/AlInP junctions

Efficient photon upconversion at remarkably low annihilator concentrations in a liquid polymer matrix: when less is more

Electrical Contacts in SOI MEMS Using Aerosol Jet Printing

Electronic transport in n-type modulation-doped AlGaAs/GaAsBi quantum well structures  
Influence of Bi and thermal annealing on electron effective mass and electron mobility

Electro-optic steering of nematicons

Electro-optic steering of random laser emission in liquid crystals

Electrospun Black Titania Nanofibers  
Influence of Hydrogen Plasma-Induced Disorder on the Electronic Structure and Photoelectrochemical Performance

Energy density-method  
An approach for a quick estimation of quench temperatures in high-field accelerator magnets

Engineering of Chern insulators and circuits of topological edge states

ESD qualification data used as the basis for building electrostatic discharge protected areas

Essential Measurements for Finite Element Simulations of Magnetostrictive Materials

Evaluation of Aerosol, Superfine Inkjet, and Photolithography Printing Techniques for Metallization of Application Specific Printed Electronic Circuits

Evaluation of crushing strength of spray-dried MgAl<sub>2</sub>O<sub>4</sub> granule beds

Evaluation of screen printed silver trace performance and long-term reliability against environmental stress on a low surface energy substrate

Exciton localization and structural disorder of GaAs<sub>1-x</sub>Bi<sub>x</sub>/GaAs quantum wells grown by molecular beam epitaxy on (311)B GaAs substrates

Experimental realization of wave-packet dynamics in cyclic quantum walks

Exploration of Two Layer Nb<sub>3</sub>Sn Designs of the Future Circular Collider Main Quadrupoles

Fabrication of ssDNA/Oligo(ethylene glycol) monolayers and patterns by exchange reaction promoted by ultraviolet light irradiation

Fabrication of ssDNA/oligo(ethylene glycol) monolayers by promoted exchange reaction with thiol and disulfide substituents

Features of correlation measurements of the parameters of pulsed hyperspectral optical fields using an asymmetric interferometer

FEM for directly coupled magneto-mechanical phenomena in electrical machines

First Cold Powering Test of REBCO Roebel Wound Coil for the EuCARD2 Future Magnet Development Project

First principles prediction of the solar cell efficiency of chalcopyrite materials  $\text{AgMX}_2$  (M=In, Al; X=S, Se, Te)

Fluid flow simulations meet high-speed video  
Computer vision comparison of droplet dynamics

Fluorimetric oxygen sensor with an efficient optical read-out for in vitro cell models

Frequency modulation of semiconductor disk laser pulses

Full-field mode sorter using two optimized phase transformations for high-dimensional quantum cryptography

Fundamental gaps of quantum dots on the cheap

GaInAsSb/AlGa(In)AsSb type I quantum wells emitting in  $3\mu\text{m}$  range for application in superluminescent diodes

Generalized slip transformations and air-gap harmonics in field models of electrical machines

Generation of a broad IR spectrum and N-soliton compression in a longitudinally inhomogeneous dispersion-shifted fibre

Generation of bound states of pulses in a soliton laser with complex relaxation of a saturable absorber

Generation of Sub-100 ps Pulses at 532, 355, and 266 nm Using a SESAM Q-Switched Microchip Laser

Geometric Structure and Chemical Ordering of Large AuCu Clusters  
A Computational Study

Geometry Analysis in Screen-Printed Stretchable Interconnects

Germanium-on-glass solar cells  
Fabrication and characterization

Ghost imaging in the time domain

Goos-Hänchen and Imbert-Fedorov shifts for epsilon-near-zero materials

Graphene-based tunable plasmon induced transparency in gold strips

Hafnium oxide thin films as a barrier against copper diffusion in solar absorbers

Halogen bonding stabilizes a cis-azobenzene derivative in the solid state  
A crystallographic study

Halogen bonding versus hydrogen bonding in driving self-assembly and performance of light-responsive supramolecular polymers

Harmonic mode-locking fiber ring laser with a pulse repetition rate up to 12 GHz

Hematite Surface Modification toward Efficient Sunlight-Driven Water Splitting Activity  
The Role of Gold Nanoparticle Addition

High-dimensional quantum gates using full-field spatial modes of photons

Highly efficient charge separation in model Z-scheme  $\text{TiO}_2/\text{TiSi}_2/\text{Si}$  photoanode by micropatterned titanium silicide interlayer

High performance corrosion resistant coatings by novel coaxial cold- and hot-wire laser cladding methods

High-resolution coded-aperture design for compressive X-ray tomography using low resolution detectors

Hot spot temperature in an HTS Coil  
Simulations with MIITs and finite element method

How well can we predict cluster fragmentation inside a mass spectrometer?

Hyperspectral phase imaging based on denoising in complex-valued eigensubspace

ICED - Inductively Coupled Energy Dissipater for Future High Field Accelerator Magnets

Identification of synchronous machine magnetization characteristics from calorimetric core-loss and no-load curve measurements

Importance of iron-loss modeling in simulation of wound-field synchronous machines

Improvements in the electromechanical properties of stretchable interconnects by locally tuning the stiffness

Influence of As/group-III flux ratio on defects formation and photovoltaic performance of GaInNAs solar cells

Influence of environmental conditions on EMF levels in a span of overhead transmission lines

Influence of temperature-induced copper diffusion on degradation of selective chromium oxy-nitride solar absorber coatings

Influence of the  $\text{P}_2\text{O}_5/\text{Al}_2\text{O}_3$  co-doping on the local environment of erbium ions and on the 1.5  $\mu\text{m}$  quantum efficiency of  $\text{Er}^{3+}$ -borosilicate glasses

Influence of the phosphate glass melt on the corrosion of functional particles occurring during the preparation of glass-ceramics

Inkjet catalyst printing and electroless copper deposition for low-cost patterned microwave passive devices on paper

Inkjet printing of radio frequency electronics  
Design methodologies and application of novel nanotechnologies

Instability of cuboctahedral copper clusters

Interfacial design and structure of protein/polymer films on oxidized AlGaIn surfaces

Investigating solvent effects on aggregation behaviour, linear and nonlinear optical properties of silver nanoclusters

Investigating the metallic behavior of Na clusters using site-specific polarizabilities

Investigation of long-term chemical stability of structured ZnO films in aqueous solutions of varying conditions

Investigation of REBCO Roebel Cable Irreversible Critical Current Degradation Under Transverse Pressure

Iron losses, magnetoelasticity and magnetostriction in ferromagnetic steel laminations

Irradiation promoted exchange reaction with disulfide substituents

Laser angle-resolved photoemission as a probe of initial state  $k_z$  dispersion, final-state band gaps, and spin texture of Dirac states in the Bi<sub>2</sub>Te<sub>3</sub> topological insulator

Light-trapping enhanced thin-film III-V quantum dot solar cells fabricated by epitaxial lift-off

Linear and nonlinear light beam propagation in chiral nematic liquid crystal waveguides

Liquid crystal light valves  
A versatile platform for nematicons

Localized surface plasmon resonance in silver nanoparticles  
Atomistic first-principles time-dependent density-functional theory calculations

Long-Range Observation of Exciplex Formation and Decay Mediated by One-Dimensional Bridges

Low-temperature germanium thin films on silicon

Magnetic and mechanical design of a 16 T common coil dipole for FCC

Magnetic non-contact friction from domain wall dynamics actuated by oscillatory mechanical motion

Measuring optical anisotropy in poly(3,4-ethylene dioxythiophene)  
poly(styrene sulfonate) films with added graphene



Mechanical behavior of a 16 T FCC dipole magnet during a quench

Mechanical characterization of pore-graded bioactive glass scaffolds produced by robocasting

Mechanical Effects of the Nonuniform Current Distribution on HTS Coils for Accelerators Wound With REBCO Roebel Cable

Mechanical stress analysis during a quench in CLIQ protected 16 T dipole magnets designed for the future circular collider

Membrane bound COMT isoform is an interfacial enzyme  
General mechanism and new drug design paradigm

Micro-Raman characterization of Germanium thin films evaporated on various substrates

Mining tailings as raw materials for reaction-sintered aluminosilicate ceramics  
Effect of mineralogical composition on microstructure and properties

Modification of Surface States of Hematite-Based Photoanodes by Submonolayer of  $\text{TiO}_2$  for Enhanced Solar Water Splitting

Morphology evolution of PS-b-PDMS block copolymer and its hierarchical directed self-assembly on block copolymer templates

Multisoliton complexes in fiber lasers

Multistep Bloch-line-mediated Walker breakdown in ferromagnetic strips

Narrow-linewidth 780 nm DFB lasers fabricated using nanoimprint lithography

Near-infrared photodetectors in evaporated ge  
Characterization and TCAD simulations

Near-surface defect profiling with slow positrons  
Argon-sputtered Al(110)

Near-threshold high spin amplification in a 1300 nm GaInNAs spin laser

Non-destructive and wireless monitoring of biodegradable polymers

Nonlinear optical activity effects in complex anisotropic three-dimensional media

Nonlocal soliton scattering in random potentials

Novel borosilicate bioactive scaffolds with persistent luminescence

Novel oxyfluorophosphate glasses and glass-ceramics

Observation of cavity structures in composite metamaterials

Observation of off-axis directional beaming via subwavelength asymmetric metallic gratings

Observation of PT-symmetric quantum interference

Observation of unusual metal-semiconductor interaction and metal-induced gap states at an oxide-semiconductor interface

The case of epitaxial BaO/Ge(100) junction

On the limit of superhydrophobicity

Defining the minimum amount of TiO<sub>2</sub> nanoparticle coating

Open Material Property Library With Native Simulation Tool Integrations - MASTO

Optical power monitors in Ge monolithically integrated on SOI chips

Optical properties of GaAs<sub>1-x</sub>Bi<sub>x</sub>/GaAs quantum well structures grown by molecular beam epitaxy on (100) and (311)B GaAs substrates

Optimization of an E3SPreSSO Energy-Extraction System for High-Field Superconducting Magnets

Optimization of convectively cooled heat sinks

Paraxial light beams in structured anisotropic media

Passive resonance sensor based method for monitoring particle suspensions

Perfect magnetic mirror and simple perfect absorber in the visible spectrum

Performance enhancement of the RFID EPC Gen2 protocol by exploiting collision re-recovery

Phosphate glasses with blue persistent luminescence prepared using the direct doping method

Photocatalytic and antibacterial properties of ZnO films with different surface topographies on stainless steel substrate

Photoinduced bending upon pulsed irradiation in azobenzene-containing crosslinked liquid-crystalline polymers

Photoinduced Electron Injection from Zinc Phthalocyanines into Zinc Oxide Nanorods  
Aggregation Effects

Photoinduced Electron Transfer in CdSe/ZnS Quantum Dot-Fullerene Hybrids

Photoinduced surface patterning of azobenzene-containing supramolecular dendrons, dendrimers and dendronized polymers

Photophysical properties of porphyrin dimer-single-walled carbon nanotube linked systems

Photovoltaic properties of low-bandgap (0.7–0.9eV) lattice-matched GaInNAsSb solar junctions grown by molecular beam epitaxy on GaAs

Physics and applications of photonic crystals

Physisorption of benzene on a tin dioxide surface  
Van der Waals interaction

Piezoresistive natural rubber-multiwall carbon nanotube nanocomposite for sensor applications

Plasma etch technologies for the development of ultra-small feature size transistor devices

Plasmon lifetime enhancement in a bright-dark mode coupled system

Polymer stabilization enhances the orientational optical nonlinearity of oligothiophene-doped nematic liquid crystals

Precipitate formation in aluminium alloys  
Multi-scale modelling approach

Preparation of water-based carbon nanotube inks and application in the inkjet printing of carbon nanotube gas sensors

Printable and flexible macroporous organosilica film with high protein adsorption capacity

Programming Photoresponse in Liquid Crystal Polymer Actuators with Laser Projector

Progress on HL-LHC Nb<sub>3</sub>Sn Magnets

Properties of nematicons in low-birefringence nematic liquid crystals

Protection Heater Design Validation for the LARP Magnets Using Thermal Imaging

Quench Protection Study of the Eurocircol 16 T cosθ Dipole for the Future Circular Collider (FCC)

Quench Protection Study of the Updated MQXF for the LHC Luminosity Upgrade (HiLumi LHC)

Radiation properties of sources inside photonic crystals

Rapid and facile synthesis of graphene oxide quantum dots with good linear and nonlinear optical properties

Rapid and sensitive detection of norovirus antibodies in human serum with a bilayer interferometry biosensor

Rational design of a printable, highly conductive silicone-based electrically conductive adhesive for stretchable radio-frequency antennas

Realization of Free-Space Long-Distance Self-Healing Bessel Beams

Real-time full-field characterization of transient dissipative soliton dynamics in a mode-locked laser

Refraction of nonlinear light beams in nematic liquid crystals

Relaxation behavior of densified sodium aluminoborate glass

Residual stress development in cold sprayed Al, Cu and Ti coatings

Resolving unoccupied electronic states with laser ARPES in bismuth-based cuprate superconductors

Restoring Integral Images from Focal Stacks Using Compressed Sensing Techniques

Reversible photodoping of TiO<sub>2</sub> nanoparticles

RF measurements to pinpoint defects in inkjet-printed, thermally and mechanically stressed coplanar waveguides

Roadmap on optical rogue waves and extreme events

Scalar diffraction field calculation from curved surfaces via Gaussian beam decomposition

Segregation of iron losses from rotational field measurements and application to electrical machine

Self-alignment in the stacking of microchips with mist-induced water droplets

Self-alignment of RFID dies on four-pad patterns with water droplet for sparse self-assembly

Self-orienting liquid crystal doped with polymer-azo-dye complex

Semantics of HTS AC Loss Modeling  
Theories, Models, and Experiments

Sensitivity Analysis of Inverse Thermal Modeling to Determine Power Losses in Electrical Machines

Silver sulfide nanoclusters and the superatom model

Simulation of cluster growth using a lattice gas model

Simulation studies of DFB laser longitudinal structures for narrow linewidth emission

Single-source multibattery solar charger  
Case study and implementation issues

Soft graphoepitaxy for large area directed self-assembly of polystyrene-block-poly(dimethylsiloxane) block copolymer on nanopatterned poss substrates fabricated by nanoimprint lithography

Solar Irradiation Independent Expression for Photovoltaic Generator Maximum Power Line

Soliton enhancement of spontaneous symmetry breaking

Stable blue phase polymeric Langmuir-Schaefer films based on unsymmetrical hydroxyalkadiynyl N-arylcarbamate derivatives

Statistical analysis of E-jet print parameter effects on Ag-nanoparticle ink droplet size

Status of the Demonstrator Magnets for the EuCARD-2 Future Magnets Project

Stimuli-Responsive Materials Based on Interpenetrating Polymer Liquid Crystal Hydrogels

Strand and cable R&D for fast cycled magnets at CERN

Structural and Electrical Characterization of Solution-Processed Electrodes for Piezoelectric Polymer Film Sensors

Structure and in vitro dissolution of Mg and Sr containing borosilicate bioactive glasses for bone tissue engineering

Study of quench protection for the Nb<sub>3</sub>Sn low-β quadrupole for the LHC luminosity upgrade (HiLumi-LHC)

Sub-100 ps monolithic diamond Raman laser emitting at 573 nm

Sub-microwatt direct laser writing of fluorescent gold nanoclusters in polymer films

Suitability of bundle approximation in AC loss analysis of NbTi wires  
Simulations and experiment

Suitability of Different Quench Protection Methods for a 16 T Block-Type Nb<sub>3</sub>Sn Accelerator Dipole Magnet

Superatom Model for Ag-S Nanocluster with Delocalized Electrons

Supercontinuum generation as a signal amplifier

Superfluid weight and Berezinskii-Kosterlitz-Thouless transition temperature of twisted bilayer graphene

Surface-induced charge state conversion of nitrogen-vacancy defects in nanodiamonds

Surface-relief gratings and stable birefringence inscribed using light of broad spectral range in supramolecular polymer-bisazobenzene complexes

Symmetry-broken electronic structure and uniaxial Fermi surface nesting of untwinned CaFe<sub>2</sub>As<sub>2</sub>

Temporal ghost imaging using wavelength conversion and two-color detection

Test results of the LARP HQ02b magnet at 1.9 K

Test Results of the LARP Nb<sub>3</sub>Sn Quadrupole HQ03a

The 16 T Dipole Development Program for FCC

The effect of carbon and nickel additions on the precursor synthesis of Cr<sub>3</sub>C<sub>2</sub>-Ni nanopowder

The effects of laser patterning 10CeTZP-Al<sub>2</sub>O<sub>3</sub> nanocomposite disc surfaces  
Osseous differentiation and cellular arrangement in vitro

The EuCARD-2 future magnets European collaboration for accelerator-quality HTS magnets

The EuCARD2 Future Magnets Program for particle accelerator high field dipoles  
review of results and next steps

The Impact of Protection Heater Delays Distribution on the Hotspot Temperature in a High-Field Accelerator Magnet

Theoretical studies of structural properties of the high-T<sub>c</sub> superconductor Y<sub>1</sub>Ba<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub>

The red, purple and blue modifications of polymeric unsymmetrical hydroxyalkadiynyl-N-arylcarbamate derivatives in  
Langmuir-Schaefer films

Thermal effects on the Wigner localization and Friedel oscillations in many-electron nanowires

Thermal evaporation of Ge on Si for near infrared detectors  
Material and device characterization

Thermally evaporated single-crystal Germanium on Silicon

Thermal, structural and optical properties of Er<sup>3+</sup> doped phosphate glasses containing silver nanoparticles

The sensitivity of random polymer brush-lamellar polystyrene-b-polymethylmethacrylate block copolymer systems to  
process conditions

Third order nonlinear optical response of TTF-based molecular corners

Three-color vector nematicon

Towards REBCO 20T+ Dipoles for Accelerators

Towards universal enrichment nanocoating for IR-ATR waveguides

Transmission, refraction, and focusing properties of labyrinth based left-handed metamaterials

Transparent Yb<sup>3+</sup> doped phosphate glass-ceramics

Transverse deformation of a lamellar TiAl alloy at high temperature by in situ microcompression

Tuneable topological domain wall states in engineered atomic chains

Tuning electronic properties of graphene heterostructures by amorphous-to-crystalline phase transitions

Two cations, two mechanisms

Interactions of sodium and calcium with zwitterionic lipid membranes

Two-time coherence of pulse trains and the integrated degree of temporal coherence

Ultrahigh-pressure form of SiO<sub>2</sub> glass with dense pyrite-type crystalline homology

Unveiling and controlling the electronic structure of oxidized semiconductor surfaces: Crystalline oxidized InSb(100)(1 × 2)-O

Crystalline oxidized InSb(100)(1 × 2)-O

Utilizing triangular mesh with MMEV to study hysteresis losses of round superconductors obeying critical state model

Very high dose electron irradiation effects on photoluminescence from GaInNAs/GaAs quantum wells grown by molecular beam epitaxy

Vortex stabilization by means of spatial solitons in nonlocal media

Wetting hysteresis induced by temperature changes

Supercooled water on hydrophobic surfaces

Toward Graphene-Based Passive UHF RFID Textile Tags

A Reliability Study

Nonlinear optics applications

In memory of George I. Stegeman

Novel optical and photonic devices based on 2D materials

Feature issue introduction

Special Issue: Mid-infrared optical materials and their device applications

Special Issue: Novel Optical and Photonic Devices based on 2D Materials

Coherence of Supercontinuum Light

1180nm VECSEL with 50 W output power

13.5 A 0.35-to-2.6GHz multilevel outphasing transmitter with a digital interpolating phase modulator enabling up to 400MHz instantaneous bandwidth

1.3μm U-bend traveling wave SOA devices for high efficiency coupling to silicon photonics

1.55- $\mu\text{m}$  wavelength wafer-fused OP-VECSELs in flip-chip configuration

2-volt Solution-Processed, Indium Oxide ( $\text{In}_2\text{O}_3$ ) Thin Film Transistors on flexible Kapton

405-nm pumped  $\text{Ce}^{3+}$ -doped silica fiber for broadband fluorescence from cyan to red

73-fs SESAM mode-locked Tm,Ho:CNGG laser at 2061 nm

Action recognition using the 3D dense microblock difference

Advancements in Solution Processable Devices using Metal Oxides For Printed Internet-of-Things Objects

Advances in implantable and wearable antennas for wireless brain-machine interface systems

A genetic algorithm for scheduling tasks onto dynamically reconfigurable hardware

A hand-held immaterial volumetric display

All-fiber, high-power, picosecond Yb double clad tapered fiber amplifier

Alpha radiation induced luminescence in solar blind spectral region

A membrane external-cavity surface-emitting laser (MECSEL) with emission around 825 nm

A method for predicting DCT-based denoising efficiency for grayscale images corrupted by AWGN and additive spatially correlated noise

A multi-band WCDMA SAW-less receivers with frequency selective feedback loop

Anisotropic ultra-large mode area Yb-doped tapered double clad fiber for ultrafast amplifiers

A novel 3-D printed loop antenna using flexible NinjaFlex material for wearable and IoT applications

A novel strain sensor based on 3D printing technology and 3D antenna design

Antenna design considerations for far field and near field wireless body-centric systems

A perceptual quality metric for high-definition stereoscopic 3D video

Artificial intelligence yesterday, today and tomorrow

ATM switch for 2.488 Gbit/s CATV network on FPGA with a high-throughput buffering architecture

Back Reflector with Diffractive Gratings for Light-Trapping in Thin-Film III-V Solar Cells



Backscattering-based wireless communication and power transfer to small biomedical implants

Benchmarking of several disparity estimation algorithms for light field processing

Bistable optical propagation in nematic liquid crystals

Combining full-reference image visual quality metrics by neural network

Complex-domain sparse imaging in terahertz pulse time-domain holography with balance detection

Compressive strain measurement using RFID patch antenna sensors

Computational wavelength resolution for in-line lensless holography  
Phase-coded diffraction patterns and wavefront group-sparsity

Continuous-wave, cascaded raman laser at 1.3, 1.5, and 1.7  $\mu\text{m}$

Continuous-wave optical parametric oscillators for mid-infrared spectroscopy

Cyclic quantum walks  
Photonic realization and decoherence analysis

Depth map occlusion filling and scene reconstruction using modified exemplar-based inpainting

Design and simulation of a slotted patch antenna sensor for wireless strain sensing

Design, Fabrication, and Wireless Evaluation of a Passive 3D-printed Moisture Sensor on a Textile Substrate

Development of dust test method for motor drives

Development of efficient electrically pumped nanolasers based on InAlGaAs tunnel junction

Dilute nitride SOAs for high-speed data processing in variable temperature conditions

Directional random laser by combining cavity-less lasing and spatial solitons in liquid crystals

Directional selectivity through the subwavelength slit in metallic gratings

Dots-on-the-fly electron beam lithography

Double-asymmetric-structure 1.5  $\mu\text{m}$  high power laser diodes

Double-side pumped membrane external-cavity surface-emitting laser (MECSEL) with increased efficiency emitting  $> 3\text{ W}$  in the 780 nm region

Dynamic laser speckle metrology with binarization of speckle patterns

Eco-friendly flexible wireless platforms by 3D printing pen

Effect of Epoxy Flux Underfill on Thermal Cycling Reliability of Sn-8Zn-3Bi Lead-Free Solder in a Sensor Application

Embroidered and e-textile conductors embedded inside 3D-printed structures

Enhanced-performance wireless conformal "smart skins" utilizing inkjet-printed carbon-nanostructures

Evaluating transparent liquid screen overlay as a haptic conductor

Method of enhancing touchscreen based user interaction by a transparent deformable liquid screen overlay

Fabrication and characterization of broadband superluminescent diodes for 2  $\mu\text{m}$  wavelength

Fabrication and performance evaluation of 3D-printed graphene passive UHF RFID tags on cardboard

Fabrication and reliability evaluation of passive UHF RFID T-shirts

Fabrication Challenges in Embedding of Components and Embroidered Conductors into 3D-printed Textile Electronics Structures

Fluorescence bandwidth of 280nm from broadband  $\text{Ce}^{3+}$ -doped silica fiber pumped with blue laser diode

Frequency Comb Generation in a Continuous-Wave Pumped Second-Order Nonlinear Waveguide Resonator

Frequency-doubled VECSEL employing a Volume Bragg Grating for linewidth narrowing

Frequency-doubled wafer-fused 638 nm VECSEL with an output power of 5.6 W

Germanium-on-glass solar cells

Green (In,Ga,Al)P-GaP light-emitting diodes grown on high-index GaAs surfaces

>8W GaInNAs VECSEL emitting at 615 nm

Highly-efficient Ho:KY(WO<sub>4</sub>)<sub>2</sub> thin-disk lasers at 2.06  $\mu\text{m}$

High performance GaSb superluminescent diodes for tunable light source at 2  $\mu\text{m}$  and 2.55  $\mu\text{m}$

High-power 1550 nm tapered DBR lasers fabricated using soft UV-nanoimprint lithography

High-Q resonance train in a plasmonic metasurface

Hot pen and laser writable photonic polymer films

Inkjet-printed dual microfluidic-based sensor integrated system

Inkjet-printed graphene-based wireless gas sensor modules

Inkjet printed single layer high-density circuitry for a MEMS device

Integrated multi-wavelength mid-IR light source for gas sensing

Integrating III-V, Si, and polymer waveguides for optical interconnects  
RAPIDO

Intelligent data service for farmers

Interstitial photodynamic therapy and glioblastoma  
Light fractionation study on a preclinical model: Preliminary results

Investigating human skin using deep learning enhanced multiphoton microscopy

Labyrinth based left-handed metamaterials and sub-wavelength focusing of electromagnetic waves

Light propagation analysis in nervous tissue for wireless optogenetic nanonetworks

Localization of light at vanishingly small disorder-levels with heavy photons

Machine learning for adaptive bilateral filtering

Maintenance-free moisture sensor on dishcloth substrate

Measuring bend losses in large-mode-area fibers

MECSELs with direct emission in the 760 nm to 810 nm spectral range  
A single- and double-side pumping comparison and high-power continuous-wave operation

Mode coupling in few-mode large-mode-area fibers

Molecular dynamics simulations for Xe absorbed in zeolites

Monolithic GaInNAsSb/GaAs VECSEL emitting at 1550 nm

Multicolor nonlinear pulse compression by consecutive optical parametric amplification in quasi-phase matched structures

Multiwavelength surface contouring from phase-coded diffraction patterns

Nanoparticles in optical waveguides  
A toolbox to promote lasers, amplifiers and sensors

Narrow Bandgap Dilute Nitride Materials for 6-junction Space Solar Cells

New multisoliton complex in Bi-doped fiber laser operated at 1450 nm

Noise characterization of Ge/Si photodetectors

Noise measurements from reconstructed digital breast tomosynthesis

No-reference visual quality assessment for image inpainting

Novel enhancement techniques for ultra-high-performance conformal wireless sensors and 'smart skins' utilizing inkjet-printed graphene

Novel Er<sup>3+</sup> doped phosphate glass-ceramics for photonics

Novel highly-efficient and misalignment insensitive wireless power transfer systems utilizing Strongly Coupled Magnetic Resonance principles

Observation of local electroluminescent cooling and identifying the remaining challenges

Optical and topographic changes in water-responsive patterned cholesteric liquid crystalline polymer coatings

Optical fiber amplifier with spectral compression elements for high-power laser pulse generation

Optical Frequency Comb Photoacoustic Spectroscopy

Passive UHF RFID-based user interface on a wooden surface

Performance of Solar Cell Grids based on Ag, Au, and Al for Cost-Effective Manufacturing

Persistent luminescent glasses prepared using the direct doping method

Phase-coded computational imaging for depth of field extension

Picosecond MOPA with ytterbium doped tapered double clad fiber

Pipeline for effective denoising of digital mammography and digital breast tomosynthesis

Power and wavelength scaling using semiconductor disk laser - bismuth fiber MOPA systems

Preserving natural scene lighting by strobe-lit video

Processing and Characterization of Bioactive Borosilicate Glasses and Scaffolds with Persistent Luminescence

Processing of printed silver patterns on an ETFE substrate

Processor core for 32 kbit/s G.726 ADPCM codecs

Propagation dynamics of ultrabroadband terahertz beams with orbital angular momentum for wireless data transfer

Pulsed high-power yellow-orange VECSEL

Quantum-well Laser Emitting at 1.2  $\mu\text{m}$ -1.3  $\mu\text{m}$  Window Monolithically Integrated on Ge Substrate

Real-time depth image-based rendering with layered dis-occlusion compensation and aliasing-free composition

Real-time measurements of nonlinear instabilities in optical fibers

Real-time measurements of ultrafast instabilities in nonlinear fiber optics  
Recent advances

Reliability of ACA interconnections on microvia HDI PCBs in thermal cycling conditions

RFDNA

A wireless authentication system on flexible substrates

Screen-Printed Stretchable Interconnects

Screen printed temporary tattoos for skin-mounted electronics

SESAM mode-locked Tm

CALGO laser at 2  $\mu\text{m}$

Short-range supercontinuum based lidar for combustion diagnostics

Simulation of photon-photon resonance enhanced direct modulation bandwidth of DFB lasers

Simulation studies of DFB laser longitudinal structures for narrow linewidth emission

Simultaneous binary hash and features learning for image retrieval

Single exposure lensless subpixel phase imaging

Single KTiOPO<sub>4</sub> nanocrystals for nonlinear probing of local optical fields and interaction with a metallic nanostructure

Site-controlled InAs Quantum Dots for Plasmonics

Strong localization in unintentional disordered photonics crystal waveguides

Study of second-harmonic generation from CdS nanostructured thin film

Sub-100 fs pulse generation from a Tm,Ho

CALYO laser mode-locked by a GaSb-based SESAM at ~2043 nm

Sub-10 optical-cycle mode-locked  $\text{Tm}:(\text{Lu}_{2/3}\text{Sc}_{1/3})_2\text{O}_3$  mixed ceramic laser at 2057 nm

Sub-parts-per-trillion sensitivity in trace gas detection by cantilever-enhanced photo-acoustic spectroscopy

Switchable unidirectional second-harmonic emission through GaAs nanoantennas

System-level design for partially reconfigurable hardware

Tailoring directional scattering of second-harmonic generation from (111)-GaAs nanoantennas

Teaching for virtual work

The effects of I/Q imbalance on wireless communications  
A survey

The magical world of metamaterials

Thermal effects on a passive wireless antenna sensor for strain and crack sensing

Thickness variation study of RFID-based folded patch antennas for strain sensing

Towards efficient nonlinear plasmonic metasurfaces

Transverse structure optimization of laterally-coupled ridge waveguide DFB lasers

Tunable Reflection Type Plasmon Induced Transparency with Graphene

Two-part stretchable passive UHF RFID textile tags

Ultrafast picosecond MOPA with Yb-doped tapered double clad fiber

Ultra-large mode area single frequency anisotropic MOPA with double clad Yb-doped tapered fiber

Walking anisotropic spatial solitons and their steering in nematic liquid crystals

Surface topography studied by off-axis digital holography

1180 nm GaInNAs quantum well based high power DBR laser diodes

1.3  $\mu\text{m}$  InAs quantum dot semiconductor disk laser

Advanced scheme of amplifier similariton laser

Finite element method incorporating coupled magneto-elastic model for magneto-mechanical energy harvester

Narrow-linewidth operation of folded VECSEL cavity with twist-mode configuration

State of polarization in anisotropic tapered fiber with extremely large core diameter

Parametric conversion in micrometer and submicrometer structured ferroelectric crystals by surface poling

Stimuli-responsive photonic polymer coatings