

2023 IEEE Nanotechnology Materials and Devices Conference (NMDC 2023)

**Paestum, Italy
22-25 October 2023**

Pages 1-456



**IEEE Catalog Number: CFP23NMD-POD
ISBN: 979-8-3503-3547-7**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***** *This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23NMD-POD
ISBN (Print-On-Demand):	979-8-3503-3547-7
ISBN (Online):	979-8-3503-3546-0
ISSN:	2378-377X

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Micro/Nanotechnology Enabled Intravascular Ultrasound Imaging and Therapy	1
<i>Xiaoning Jiang</i>	
Machine Learning Based Exploitation and Characterization of 2D Materials	2
<i>Xiaoying Zhuang</i>	
From the Atomic Structure to the Optoelectronic Properties Studies of Low Dimensional Inorganic NanoMaterials Via TEM.....	4
<i>R. Arenal</i>	
Lessons from Nature: How to Get the Best Out of Materials.....	5
<i>Mato Knez</i>	
Recent Trends in Chemoresistive Gas Sensors with Nanostrcutured Semiconductors.....	6
<i>Vincenzo Guidi, Elena Spagnoli, Barbara Fabbri, Arianna Rossi, Francesco Tralli, Andrey V. Solov'Yov</i>	
Atomic and Nanoscale Order/Disorder Phenomena in Thermoelectric Copper-Based Sulfides	8
<i>Emmanuel Guilmeau</i>	
Synthesis of Ge _{1-X} Sn _X Nanoparticles Under Non-Inert Conditions	9
<i>Nicolaj Brink Søgaard, Martin Bondesgaard, Andreas Dueholm Bertelsen, Bo Brummerstedt Iversen, Brian Julsgaard</i>	
2D Tunable Optoelectronics	11
<i>Meng Zhao, Zeng Wang, Qing Yang Steve Wu, Yuanda Liu, Jinghua Teng</i>	
Near-Infrared Photodetectors Based on Graphene Embedded Between Amorphous and Crystalline Silicon.....	13
<i>Teresa Crisci, Piera Maccagnani, Luigi Moretti, Caterina Summonte, Mariano Gioffrè, Rita Rizzoli, Mario Medugno, Mario Iodice, Giuseppe Coppola, Maurizio Casalino</i>	
The Out-Of-Plane Optical Constant of a Two-Dimensional Crystal: Experimental Observation of an Elusive Quantity	18
<i>Michele Merano</i>	
Metal-Dielectric-Metal Nanocavities with Vanishing Permittivity: Resonance Coupling and Strong Light-Matter Interaction	19
<i>Aniket Patra, Vincenzo Caligiuri, Renuka D. Pothuraju, Bruno Zappone, Antonio De Luca, Roman Krahne</i>	
Van Der Waals Integrated Silicon Broadband Imagers.....	21
<i>Yang Xu, Feng Tian, Srikrishna C. Bodepudi, Zongwen Li, Yunfan Dong, Xiaochen Wang, Yance Chen, Yuan Ma, Jian Chai, Bin Yu</i>	
Converse Flexoelectricity of Low-Dimensional Bismuth Selenite Revealed by Piezoresponce Force Microscopy (PFM)	25
<i>Q. Liu, S. S. Nanthakumar, X. Zhuang</i>	
Rational Design of 0D/2D Heterojunction for Broadband PtSe ₂ Photodetectors	26
<i>Zhehan Wang, Zhenghua Zhou, Yamei Ding, Tuo Zhang, Ruxia Du, Xu Jing, Li Tao</i>	

Self-Organization-Directed Switching of Optical Properties of Gold Nanoclusters	28
<i>Katsuaki Konishi</i>	
Moving from Fundamental Studies to Industrial Applications with CVD-Grown 2D Materials	30
<i>Camilla Coletti</i>	
Low-Temperature Effects on Electron Transport in Small-Diameter Silicon Nanowire	31
<i>Amit Verma, Daryoush Shiri, Reza Nekovei</i>	
Towards Control of Dielectric Properties in Single-Layer WS ₂ via Defect Density Engineering.....	35
<i>Hasret Agircan, Domenica Convertino, Antonio Rossi, Leonardo Martini, Simona Pace, Neeraj Mishra, Kathrin Küster, Ulrich Starke, Güldem Kartal Sireli, Stiven Forti, Camilla Coletti</i>	
Wide Band Photodetectors Based on Bi ₂ Se ₃ Topological Insulator.....	37
<i>M. Salvato, N. Loudhaief, P. Castrucci</i>	
Molecular Spin Qudits and Chiral-Induced Spin Selectivity: Two Interesting Tools for Quantum Technologies.....	41
<i>S. Carretta</i>	
Genesis of the Concept of Topological Current Divider: From Valleytronics to Spintronics.....	43
<i>Romeo F</i>	
Ultra-Fast Photonic-Assisted Spintronics-CMOS Computing	45
<i>Farshad Moradi</i>	
Spin Wave Driven Skyrmionium Based Transistor with PMA Barrier.....	47
<i>Shipra Saini, Alok Kumar Shukla, Namita Bindal, Brajesh Kumar Kaushik</i>	
Machine Learning Assisted Statistical Variation Analysis of Voltage Gated Spin Orbit Torque Magnetic Tunnel Junction	53
<i>Alok Kumar Shukla, Hemkant Nehete, Sandeep Soni, Partha Kaushik, Brajesh Kumar Kaushik</i>	
Nanoporous Architectures: Ultra-Fast Rotor Dynamics and Light-Responsive Materials	59
<i>Silvia Bracco</i>	
High Surface Area Nanoporous Crystalline Films: Highly Absorbent, Transparent and Flexible.....	61
<i>Paola Rizzo</i>	
Dynamic Microporous Mixed-Ligand MOFs as Adaptive Crystalline Containers for Guest Encapsulation and Release	63
<i>P. Pelagatti, P. P. Mazzeo, A. Bacchi, D. Giovanardi</i>	
Cyclic Peptoids as Building Blocks for Engineering Porous Molecular Solids	65
<i>Giovanni Pierri, Irene Izzo, Francesco De Riccardis, Consiglia Tedesco</i>	
CO ₂ Capture and Storage by Natural and Synthetic Zeolites: From Validation in Laboratory Scale to Small Prototype Demonstration	67
<i>Melodi Dosa, Margherita Cavallo, Natale G. Porcaro, Francesca Bonino, Valentina Crocella', Marco Piumetti, Silvia Bordiga</i>	
Nanoporous Metal-Organic Frameworks: An in Situ Crystallographic Visualization of Gaseous Guest Molecules	69
<i>Vincent J Smith</i>	

What Are 2D Materials Good For?.....	71
<i>Eric Pop</i>	
III-V Monolithic Integration for Optoelectronic Devices and New Developments on 2D Materials.....	72
<i>T. Baron, V. Letka, H. Hijazi, H. Mehdi, L. Mallet Dida, P. Hauchecorne, M. Martin, N. Massara, P. Gaillard, Jeremy Dafonseca, J. Moeyaert, V. Loup, J. Mignot, F. Bassani, B. Salem, M. Tang, S. Chen, H. Liu, C. Jany</i>	
Efficient and Accurate Electronic Transport Simulations for Complex Bandstructure Materials	74
<i>N. Neophytou, Z. Li, P. Graziosi</i>	
Wafer-Scale Integration of 2D Materials for Application in High-Performance Electronics and Optoelectronics.....	75
<i>Zhenxing Wang</i>	
Effect of PMMA Capping Layer on Black Phosphorus Field Effect Transistor.....	77
<i>A. Kumar, L. Viscardi, E. Faella, F. Giubileo, K. Intonti, A. Pelella, O. Durante, S. Sleziona, M. Schleberger, A. Di Bartolomeo</i>	
Complementary Inverter Based on C60 and Pentacene Doped CVD Graphene Field Effect Transistors on SiO ₂	81
<i>Jacopo Oswald, Davide Beretta, Michael Stiefel, Roman Furrer, Dominique Vuillaume, Michel Calame</i>	
Tuneable Excitons in Emerging 2D Materials.....	87
<i>S. Russo, M. F. Craciun</i>	
Hydrogel Plasmonic Nanocomposites for Biosensing Applications: Numerical Modeling and Transduction Mechanisms	88
<i>Bruno Miranda, Valeria Nocerino, Ilaria Rea, Principia Dardano, Stefania Dello Iacono, Luca De Stefano</i>	
Strong Modulation of Electronic and Optical Properties in 2D Semiconductors Via the Interactions with Molecular Materials	92
<i>Daisuke Kiriya</i>	
Wafer-Scale Transfer-Free Graphene as an ITO Replacement for OLEDs	94
<i>Zhichao Weng, Sebastian Dixon, Lok Yi Lee, Colin J. Humphreys, Ivor Guiney, Oliver Fenwick, William P. Gillin</i>	
Sustainable and Facile Functionalization of Carbon Black Via Dry Ball Milling	96
<i>Maria Rosaria Acocella, Aida Kiani, Getano Guerra</i>	
A Deep Investigation into Nano SiO ₂ Reinforced RTV for High Voltage Insulators Application	98
<i>Z. Rajabimashhadi, A. Zolriasatein, D. Hasanzadeh Ardebili, M. M. Alam, C. E. Corcione</i>	
Exquisite Control of Light Using Semiconductor Photonic Integrated Circuits.....	104
<i>John H. Marsh, Lianping Hou</i>	
Ge and Si Microcrystal Photodetectors with Enhanced Infrared Responsivity	105
<i>V. Falcone, A. Barzaghi, F. Signorelli, R. Bergamaschini, J. Valente, D. Paul, A. Tosi, G. Isella</i>	
Topological Phases in Two-Dimensional Transition Metal Halides and Oxides	107
<i>Michel Houssa, Ruishen Meng, Simon Mellaerts, Elaheh Akhouni, Aryan Afzalian, Geoffrey Pourtois, Jean-Pierre Locquet, Valeri Afanas'Ev</i>	

Study on the Metal-Graphene Contact Resistance Achieved with One-Dimensional Contact Architecture.....	109
<i>Daniele Capista, Rasuole Lukose, Farnaz Majnoon, Marco Lisker, Christian Wenger, Mindaugas Lukosius</i>	
Enhancement of Optical Properties of GaAs Tunnel-Coupled Quantum Well Cap Layer	111
<i>Jirarut Joonhuay, Paphavee Van Dommelen</i>	
Functionalization of Carbon Nanotubes for Bioelectrochemical Applications.....	115
<i>Michael Holzinger</i>	
ALD Modified Cross-Linked ZnO Nanowire Sensors for Pollutant Gases.....	120
<i>Camilla Baratto, M. Ferroni, Guido Faglia, Viktoria Golovanova, Hanna Hakola, Tapio Niemi, Nikolai Tkachenko, Viacheslav Golovanov</i>	
Square SnO ₂ Nanotubes: Structure, Properties, Devices	122
<i>Martin W. Allen</i>	
Discrimination of Complex Mixtures Using Carbon Nanotubes-Based Multichannel Electronic Nose: Coffee Aromas	124
<i>Shirong Huang, Leif Riemenschneider, Luis Antonio Panes-Ruiz, Bergoi Ibarlucea, Giancarlo Cuniberti</i>	
Semiconductor Nanowires for Polarization Control in Integrated Waveguides	129
<i>V. Vitali, A. Fontana, V. Demontis, D. Prete, A. Salamon, V. Bellani, I. Cristiani, F. Rossella, C. Lacava</i>	
Study of Position Uncertainties of Nanowire Arrays on Silicon Waveguide in a Polarization Rotator Device.....	130
<i>D. Prete, V. Vitali, C. Lacava, A. Fontana, V. Demontis, A. Salamon, V. Bellani, I. Cristiani, F. Rossella</i>	
MemComputing: An Opportunity for Nanotechnology.....	131
<i>Massimiliano Di Ventra</i>	
Synthetic Antiferromagnets for Biomedical and Flexible Spintronic Applications.....	132
<i>M. Hassan, S. Laureti, D. Peddis, A. M. Gerardino, G. Barucca, F. Fagiani, C. Rinaldi, P. Makushko, D. Makarov, N. Schmidt, M. Albrecht, G. Varvaro</i>	
Physical Unclonable Function Chip Based on SOT-MRAM in 180 nm CMOS Technology.....	134
<i>Luyao Shi, Zhengyi Hou, Tianrui Guo, Pengbin Li, Chuanpeng Jiang, Kaihua Cao, Zhaozhao Wang, Weisheng Zhao, Bi Wang</i>	
A Delay System Reservoir Based on a Nano-Ionic Solid Electrolyte FET	139
<i>M. M. De Souza, X. Song, A. Gaurav, S. K. Manhas, P. B. Pillai, S. Sikdar, A. Kumar, A. Gilra, E. Vasilaki</i>	
High-Speed and Reconfigurable Physical Unclonable Functions Based on SOT-MTJ Array.....	141
<i>Zhengyi Hou, Min Wang, Jialiang Yin, Kewen Shi, Bi Wang, Yuanfu Zhao, Zhaozhao Wang</i>	
Nano-Bio Hybrids for Energy Conversion Applications	145
<i>Elena A. Rozhkova</i>	
Nanomaterial-Enhanced Biopolymer-Based TENGs as Sustainable Energy Harvesters for Wearables and On-Skin Electronics	146
<i>Charalampos Pitsalidis</i>	

Nanostructured Metal Oxide Semiconductors for Photoelectrocatalytic Conversion of Solar Energy	147
<i>P. Vecchi, A. Piccioni, I. Carrai, R. Mazzaro, F. Boscherini, P. Ceroni, S. Caramori, L. Pasquini</i>	
Printable Thermoelectric Device for Low Temperature Energy Harvesting.....	148
<i>Andrea Reale</i>	
Development of Oxygen Sensor in Humid Hydrogen Background Based on Metal Oxide Sensor and Machine Learning Algorithm.....	150
<i>Yeongjae Kwon, Inkyu Park</i>	
Graphene-Based Flexible Thermoelectric Generators for Heat Recovery Systems	152
<i>Umar Farooq, Babar Ali, Hossein C. Bidsorkhi, Alessandro G. D'Aloia, Maria S. Sarto</i>	
Selective Sensing with 2D Materials.....	157
<i>Georg S. Duesberg</i>	
Enhancing Functionalities of 2D and 2D/3D Hybrid Perovskite Films as Ionizing Radiation Detectors.....	158
<i>Beatrice Fraboni</i>	
Introducing 2D Materials in Magnetic Tunnel Junctions	159
<i>Bruno Dlubak, V. Zatko, S. M.-M. Dubois, M. Galbiati, J. Peiro, F. Godel, M. Piquemal-Banci, R. Galceran, C. Carretero, S. Collin, A. Vecchiola, K. Bouzehouane, S. Xavier, B. Servet, F. Panciera, G. Patriarche, M. Och, C. Mattevi, P. R. Kidambi, R. S. Weatherup, S. Caneva, J. Robertson, S. Hofmann, A. Fert, F. Petroff, J.-C. Charlier, M.-B. Martin, P. Seneor</i>	
Electric Field-Controlled Ambipolar Resistance Behavior in Vanadium Dioxide Nano-Bridge Transistors	160
<i>Teruo Kanki, Yoshiyuki Higuchi, Fumiya Endo, Nicola Manca, Luca Pellegrino, Daniele Marré</i>	
Electronic Transport in InAs/GaSb Nanostructured Type-II Superlattices for Infrared Sensing and Imaging Applications.....	162
<i>G. A. Umana-Membreno, R. Müller, J. Niemasz, N. D. Akhavan, J. Antoszewski, V. Daumer, R. Rehm, L. Faraone</i>	
Nano-Antennas for Efficient Electromagnetic Interference Shielding at the Microwave Frequency Range.....	164
<i>Jyotsna Das, Alexander Samokhvalov, Shashi P Karna, Asha J. Hall, Mark Mirotsnik, Dereje Seifu</i>	
Nano-Biomaterials and Microscopy-Based Devices – Where Sciences Contribute and Engineering Enables Developments	169
<i>A. G. Skirtach</i>	
Optical Flash Switching Via Electrically Controlled Metasurfaces.....	170
<i>Khosro Zangeneh Kamali, Lei Xu, Nikita Gagrani, Hark Hoe Tan, Chennupati Jagadish, Andrey Miroshnichenko, Dragomir Neshev, Mohsen Rahmani</i>	
Ultrafast Dynamics of 2D Materials and Their Heterostructures	171
<i>Armando Genco, Charalambos Louca, Oleg Dogadov, Chiara Trovatello, Alexander I. Tartakovskii, Stefano Dal Conte, Giulio Cerullo</i>	
A Detailed Examination of Layer-Dependent Photoemission Spectra and Surface Potential of CrCl ₃	173
<i>R. Gunnella, S. J. Rezvani, S. Kazim, M. Azizinia, L. Ottaviano, D. Mastrippolito, R. Parmar, L. Gregoratti, M. Amati</i>	

Electric Field Distribution in Cell Aggregates in Presence of Nanostructures Under Electroporation Pulses.....	174
<i>E. Sieni, S. Nemec, P. Lamberti, S. Romeo, P. Sgarbossa, M. Forzan, M. Golzio, M. P. Rols, J. Kolosnjaj-Tabi, S. Kralj</i>	
Graphene-Based Van Der Waals 2D Heterostructures for Plasmonic Terahertz Device Applications.....	180
<i>Taiichi Otsuji, Victor Ryzhii</i>	
Quantum Materials and Nanoplasmonics for Quantum Nanophotonics at Ambient Temperatures	182
<i>Ortwin Hess</i>	
High Performance UV Photodetector Based on $\beta\text{Ga}_2\text{O}_3$ /GaN Heterojunction Fabricated by a Reversed Substitution Growth Method	183
<i>Yurui Han, Yuefei Wang, Bingsheng Li, Yichun Liu</i>	
Excitons in Moiré Heterostructures.....	185
<i>A. Högele</i>	
New 2D- π -2A Chromophores Based on Tetraphenyl Fulvene	186
<i>C. Coluccini</i>	
Exceptional Points in Nanophotonics	191
<i>C. A. Downing</i>	
Hybrid 2D/CMOS Microchips for Memristive Applications	192
<i>Mario Lanza</i>	
Chemistry of Single Layer Graphene on Ni(111): Adsorption and Reactions Above and Under Cover	193
<i>L. Vattuone</i>	
Vertical Graphene-Based Transistors for Power Electronics, Optoelectronics and Radio-Frequency Applications.....	196
<i>Carsten Strobel, Carlos A. Chavarin, Christian Wenger, Matthias Albert, Thomas Mikolajick</i>	
Ultrafast Investigation of Thermomechanical Energy Transfer in InAs Nanowires.....	202
<i>A. Colosimo, V. Demontis, C. Panais, V. Zannier, L. Sorba, F. Beltram, N. Lascoux, N. Del Fatti, F. Banfi, F. Rossella</i>	
Designing Anti-Icing Surface by Controlling Icing.....	203
<i>Jianjun Wang</i>	
The Emergence of Nanoscale Neural Networks (N^3) Systems: Moving Forward in the Years Ahead	204
<i>Fabrizio Lombardi</i>	
Spintronic Devices Towards Advanced Computing Framework	208
<i>Yue Zhang, Zhizhong Zhang, Kelian Lin, Zhenyi Zheng, Xueqiang Feng, Weisheng Zhao</i>	
An Adaptive Acoustic Neuromorphic Auditory System.....	210
<i>Claudia Lenk, Tsvetan Ivanov, Steve Durstewitz, Kalpan Ved, Vishal Gubbi, Martin Ziegler</i>	
A Roadmap for Molecular Field-Coupled Nanocomputing Actualization	212
<i>Federico Ravera, Giuliana Beretta, Yuri Ardesi, Maciej Krzywiecki, Mariagrazia Graziano, Gianluca Piccinini</i>	

Enhanced Photodetection in Carbon-Based Devices with MIS Parallel Structure	214
<i>Aniello Pelella, Daniele Capista, Alessandro Grillo, Enver Faella, Maurizio Passacantando, Nadia Martucciello, Filippo Giubileo, Paola Romano, Antonio Di Bartolomeo</i>	
Integration of 2D Materials with Textiles for Applications in Wearable Electronics	218
<i>Monica F Craciun, Ana Neves, Saverio Russo, Kavya Sreeja Sadanandan, Agnes Bacon, Dong-Wook Shin, Saad Fr Alkhalifa, Gopika Rajan, Elias Torres Alonso, Connor Murphy</i>	
Green Path to Power: Spray-Printed LNMO Cathodes Using Cyrene for Sustainable Lithium-Ion Battery Production.....	221
<i>R. Sliz, E. Hannila, J. Valikangas, S. Illikainen, H. H. Nguyen, I. S. Roy, U. Lassi, T. Fabritius</i>	
Attaining Prescribed Isotropic Effective Thermal Conductivity Via Topology Optimization and Symmetry Exploitation.....	225
<i>Giuseppe Romano</i>	
Using a Mixed Solvent to Improve the Morphology of Thin Films, a One-Step Method is Employed to Form Three-Dimensional Lead-Free Perovskite Solar Cells	227
<i>Yi Cheng Huang, Yen Shuo Chen, Pin Chia Tseng, Ching Chung Lin, Hsin Chiang You, Fu Hsiang Ko</i>	
Hybrid Transition Metal Carbides on Graphene Nanowalls Compounds for Very Efficient Hydrogen Evolution Reaction	231
<i>Roger Amade, Stefanos Chatoglou, Rogelio Ospina, Yang Ma, Shahadev Rodriguez, Xavier Vendrell, Enric Bertran-Serra</i>	
Two-Dimensional Material Inks and Composites for Printed and Wearable Electronics	233
<i>Felice Torrisi</i>	
Carbon Nanotube-Based Epidermal Electronic Systems.....	235
<i>Youfan Hu</i>	
A Multifunctional and Multisensory Organic Smart Material	237
<i>Amos Bardea, Fernando Patolsky</i>	
Investigation of Highly Soluble Polyvinylpyrrolidone as Biocompatible Polymer Gate Dielectric for Organic Transistors	239
<i>Gargi Konwar, Somnath Bhattacharjee, Sachin Rahi, Shree Prakash Tiwari</i>	
Ionic Liquid Gating of CVD-Growth WS ₂ -Based Field Effect Transistors.....	243
<i>Leonardo Martini, Valeria Demontis, Domenic Prete, Domenica Convertino, Simona Pace, Paolo Paletti, Camilla Coletti, Francesco Rossella</i>	
Development of Segregated Polyethylene/Carbon Black Composites for Embedded Heating and Strain Sensing Elements in Electrofusion Welded Joints - Part I: Potential Assessment of Segregated Structures for Strain Sensing.	244
<i>Yevheniya Buinova, Anastasiia Kobylukh, Marcin Godzierz, Maksym Iurzhenko, Oleksii Maruzhenko</i>	
Spherical Aggregation of ZnO Nanoparticles: A Joint Experimental and Theoretical Approach.....	245
<i>Ankica Šaric, Ines Despotovic</i>	
Enhancing Efficiency of Second-Harmonic Generation in III-V Nanowires Via Lattice Engineering	246
<i>Bin Zhang, Jan E. Stehr, Ping-Ping Chen, Xingjun Wang, Fumitaro Ishikawa, Weimin M. Chen, Irina A. Buyanova</i>	

Multi Cycle and Material Deposition for Spatial Atomic Layer Deposition Process	248
<i>Atilla C. Varga, Matthias Carnoy, Ivan Kundlerata, Maksym Plakhotnyuk, Julien Bachmann</i>	
Towards Fully Spin-Polarized Light-Emitting Semiconductor Nanostructures for Room Temperature Opto-Spintronics	250
<i>Yuqing Huang, Ville Polojärvi, Satoshi Hiura, Pontus Höjer, Arto Aho, Riku Isoaho, Teemu Hakkarainen, Mircea Guina, Shino Sato, Junichi Takayama, Akihiro Murayama, Irina A. Buyanova, Weimin M. Chen</i>	
Ultralight Mullite Nanofibrous Aerogel with Thermal Insulation Performance and Robust Mechanical Property.....	252
<i>Liu Yanke, Zhang Bo, Tian Xiangyu, Zhou Liang, Long Haiyi, Qiu Yubing, Tang Yawei</i>	
Bi ₂ Se ₃ Characterization: Growth, Composition and Related Electronic Properties.....	256
<i>R. Gunnella, S. J. Rezvani, M. Azizinia, R. Parmar, L. Gregoratti, M. Amati</i>	
Direct Growth of Graphene on Stainless Steel as Protective Layer Against Hydrogen Corrosion.....	257
<i>M. L. Miglietta, T. Polichetti, E. Massera, A. De Girolamo Del Mauro, B. Alfano</i>	
Study of the Coercivity Field in a Sample of NiFe ₂ O ₄ -OA Nanoparticles at Different Temperatures: Comparing the Different Processes to Evaluate T _B by DC Measurements.....	259
<i>M. Modestino, A. Galluzzi, M. Sarno, M. Polichetti</i>	
Manufacturing Technology of Ultra-Hard Master Mold with Electro-Discharge and Mechanical Machining System for Nano-Devices.....	264
<i>Eun-Ji Gwak, Jongkeun Sim, Chan-Woo Lee, Dong-Hyun Seo, Jun Sae Han, Tae-Jin Je, Doo-Sun Choi</i>	
Development of Poly(3-Hydroxybutyrate) Based Biocomposites with Graphene Fillers of Various Structure for Piezoresitive Sensors.....	266
<i>Viktoria Talaniuk, Marcin Godzierz, Maksym Iurhenko, Urszula Szeluga</i>	
Connection CdS/CdTe Based Photovoltaic Converters in Micromodules.....	268
<i>Kseniia Minakova, Roman Zaitsev, Mykhailo Kirichenko</i>	
Optoelectronic Properties of Two-Dimensional α-In ₂ Se ₃ Field Effect Transistor	270
<i>Aniello Pelella, Paola Romano, Kimberly Intonti, Loredana Viscardi, Ofelia Durante, Daniele Capista, Maurizio Passacantando, Filippo Giubileo, Mohammed Ali S Alshehri, Manal Safar G Alghamdi, Monica Craciun, Saverio Russo, Antonio Di Bartolomeo</i>	
Carbon Nanotube Device Operations at Elevated Temperatures.....	272
<i>Reza Nekovei, Amit Verma</i>	
Synthesis and Characterization of Structural and Optical Properties of Boron-Nitride Quantum Dots	276
<i>A. Bahdanava, M. Shundala, Y. Osika, L. Golubewa, R. Karpicz, T. Kulahava</i>	
Stability of Graphene Quantum Dots and Doxorubicin Aggregates Evaluated by Optical Methods	278
<i>Martynas Zalieckas, Vilius Cirgelis, Yaraslaw Padrez, Lena Golubewa, Renata Karpicz</i>	
Bioactive Calcium Phosphate-Polymer Nerve Conduits with Carbon-Based and Magnetite Nanoparticles: HPLC Study	279
<i>Mariia O. Kumeda, Liudmyla B. Sukhodub, Leonid F. Sukhodub</i>	
Study of Electrosprayed Transition Metal Oxides for Photonics and Protective Coatings.....	281
<i>M. Azizinia, S. J. Rezvani, R. Gunnella</i>	

Chemical Solution Deposition of La-Doped HfO ₂ Ferroelectrics for Tellurium Field-Effect Transistors	283
<i>Uisik Jeong, Sunkook Kim</i>	
Self-Aligned Formation and Positioning of Nanogap Templates	284
<i>Dean De Boer, Erwin Berenschot, Yasser Pordeli, Niels Tas</i>	
Engineered Bio-Hybrid Photo-Electrode Surface Based on Semiconducting Polymers and Carbon Nanotubes for Living Cells Photo-Capacitive Stimulation	290
<i>M. Ciocca, G. Ciccone, P. Mariani, L. Petti, P. Lugli, T. M. Brown</i>	
Influence of Geometric Variations on the Terahertz Electromagnetic Response of a Graphene-Enhanced Grating	296
<i>Monica La Mura, Patrizia Lamberti, Vincenzo Tucci, Aleksandr Saushin, Viatcheslav Vanyukov, Polina Kuzhir</i>	
Synthetic Antiferromagnetic Skyrmion Based Integrate and Fire Neuronal Device	301
<i>Ravi Shankar Verma, Ravish Kumar Raj, Brajesh Kumar Kaushik</i>	
Investigation of the Refractive Index Sensitivity of Hexagonally Arranged Gold Nanoparticles with Finite Element Method (FEM)	309
<i>Rebeka Kovács, Attila Bonyár</i>	
Process and Simulation Design of Silicon-On-Insulator (SOI) NMOS.....	313
<i>Zih-Fei Chen, Yu-Sheng Lai, Cheng-Ming Huang, Yeong-Her Wang, Meng-Hsueh Chiang</i>	
Ultra-Precision Cutting Technology to Fabricate the Micro Hole Array Having Ultra-Thin Wall	318
<i>Doo-Sun Choi, Eun-Ji Gwak, Jun Sae Han, Chan-Woo Lee, Dong-Hyun Seo, Tae-Jin Je, Eun-Chae Jeon</i>	
Optimization of Halide Composition and Interfacial Passivation for High-Performing Indoor Flexible Perovskite Solar Cells on PET.....	321
<i>Z. Skafí, J. Xu, V. Mottaghitalab, L. Mivehi, B. Taheri, F. Jafarzadeh, S. K. Podapangi, D. Altamura, M. R. Guascito, L. Barba, C. Giannini, A. Rizzo, F. De Rossi, H. J. Lomeri, L. Sorbello, F. Matteocci, F. Brunetti, T. M. Brown</i>	
A Preliminary Study of graphene/Silicon Schottky Barrier Solar Cells Encapsulation.....	325
<i>L. Lancellotti, E. Bobeico, V. Fiandra, L. Sannino, C. Andreozzi, P. Delli Veneri, F. Buonocore, R. Chierchia, N. Lisi</i>	
Field-Effect Transistor CO ₂ Detector Based on Few Layers of Black Phosphorus	331
<i>Z. Fekri, V. C. Köst, J. Zscharschuch, K. Nieweglowski, N. T. Lambeva, K. Watanabe, T. Taniguchi, K. Bock, A. Erbe</i>	
SWCNT-Si Photodetector with Position-Dependent Photoresponse	335
<i>Daniele Capista, Filippo Giubileo, Luca Lozzi, Nadia Martucciello, Antonio Di Bartolomeo, Maurizio Passacantando</i>	
Temperature-Induced Step-Like Enhancement of Drain Current in a Two-Dimensional ReS ₂ Field-Effect Transistor	339
<i>Sebastiano De Stefano, Ofelia Durante, Filippo Giubileo, Enver Faella, Kimberly Intonti, Arun Kumar, Loredana Viscardi, Monika Craciun, Saverio Russo, Antonio Di Bartolomeo</i>	
Transparent Micro-LED Display Using Double-Layered UV Imprinting.....	341
<i>Munhyung Jo, Dongjin Kim, Duck Weon Lee, Seung S. Lee</i>	

Processes of Interaction of Oxygen with Thin Films of Chalcogenides.....	346
<i>Tetiana M. Mazur, Myroslav P. Mazur</i>	
Temperature Dependent Electrical Properties and Cycling Stability of a Highly Loaded LDPE/MWCNT Composite Film with Coplanar Gold Contacts.....	348
<i>Arpana Singh, Vincenzo Carrano, Heinz-Christoph Neitzert</i>	
Surface Nanocrystallization of Low-Alloyed Steel by Multidirectional Severe Plastic Deformation for Improved Mechanical and Tribological Properties.....	350
<i>Olha Maksymiv, Volodymyr Gurey, Volodymyr Kyryliv, Ihor Hurey, Yaroslav Kyryliv, Olha Zvirko</i>	
Electric-Field Control of Magnetization Dynamics in Antiferromagnets.....	352
<i>O. Boliasova, V. Krivoruchko</i>	
2D Semiconductor Optoelectronics: Advances, Challenges and Opportunities	353
<i>Ali Javey</i>	
Water-Based, Defect-Free and Biocompatible 2D Material Inks for Printed Electronics	354
<i>Cinzia Casiraghi</i>	
Nanometer-Scale Thermal Probes for Materials Science, Manufacturing, and Metrology	355
<i>William P. King</i>	
Towards Controlled Synthesis and Scalable Manufacturing of 2D Crystals	356
<i>Jun Lou</i>	
XPS Surface Characterization to Unravel Nanomaterials Properties	357
<i>N. Ditaranto</i>	
Tuning the Properties and Functionality of 2D-Materials: From Substitutional Doping to Janus- MoSSe	358
<i>Jennifer Schmeink, Peter Kratzer, Marika Schleberger</i>	
Enabling Direct-ARPES on Nanostructured Quantum Materials Grown by Dual-PLD	360
<i>S. K. Chaluvadi, C. Bigi, S. Punathum Chalil, F. Mazzola, A. Jana, J. Fujii, I. Vobornik, G. Panaccione, G. Rossi, P. Organi</i>	
Analysis Native Oxide Formation Kinetics in Nanometer-Scale NbTiN Thin Films.....	366
<i>Sami A. Nazib, Mark V. Reymatias, Troy A. Hutchins-Delgado, Shruti I. Gharde, Erika M. Sommer, Erum Jamil, Gennady A. Smolyakov, Tzu-Ming Lu, Sergei A. Ivanov, Ivan Komissarov, Roman Sobolewski, Marek Osinski</i>	
Pressure-Dependent Photoconductivity in Two Dimensional ReS ₂	368
<i>K. Intonti, E. Faella, A. Kumar, L. Viscardi, F. Giubileo, H. T. Lam, K. Anastasiou, M. Craciun, S. Russo, A. Di Bartolomeo</i>	
Metasurfaces and Metalenses for Miniaturization of Optical Devices	373
<i>Junsuk Rho</i>	
Lasing in All-Inorganic Halide Perovskite Semiconductors.....	375
<i>Manuel Runkel, Naho Kurahashi, Cedric Kreusel, Fereshteh Vahabzad, Thomas Riedl</i>	
Materials with Adjustable Refractive Index for Precision Optical Filter Fabrication.....	377
<i>V. Torres-Costa, E. Pérez-Picazo, I. Sardaña-Ortega, R. J. Martín-Palma</i>	

Pb-Less and Pb-Free Hybrid and Full Inorganic Halide Perovskites for Solar Energy Conversion: Insights from First-Principles	379
<i>Giacomo Giorgi, Koichi Yamashita, Maurizia Palummo</i>	
Directional Lasing in Coupled InP Micro-Ring/Nanowire Systems.....	381
<i>Wei Wen Wong, Naiyin Wang, Chennupati Jagadish, Hark Hoe Tan</i>	
Ultrafast High-Coherence Nanobeam Electron Diffraction.....	383
<i>Till Domröse, Thomas Danz, Sophie F. Schaible, Kai Rossnagel, Sergey V. Yalunin, Claus Ropers</i>	
Nanoparticle-Based Medical Nanodevices for Cancer Nanomedicine.....	385
<i>Naoki Komatsu</i>	
Nanoneedle-Equipped Medical Devices for Gene Delivery and Biosensing	386
<i>Ciro Chiappini</i>	
The Impact of Hybrid Nano-Architectures and Alternative Biomodels in Translational Oncology.....	387
<i>Valerio Voliani</i>	
Investigation of Cellular Morpho-Mechanical Alteration as a Novel Diagnostic Tool in Nanomedicine.....	389
<i>Mariafrancesca Cascione, Valeria De Matteis, Rosaria Rinaldi</i>	
An in Silico Study on Nanocomposite Magnetic Implants for Microwave Cancer Theranostics.....	395
<i>Matteo B. Lodi, Nicola Curreli, Alessandro Fanti, G. Mazzarella</i>	
Unravelling the Multi-Enzymatic Activity of Platinum Nanoparticles	401
<i>L. Cursi, G. Mirra, L. Boselli, P. P. Pompa</i>	
Local Anodic Oxidation Nanolithography.....	403
<i>Jian Gao, Xichun Luo</i>	
Real-Time Plant Health Monitoring System Based on a Metal Oxide Semiconductor Gas Sensor Array.....	405
<i>Cheolmin Kim, Sungjun Choung, Mingu Kang, Yeongjae Kwon, Kichul Lee, Sang-Gyu Kim, Inkyu Park</i>	
From Synthesis to Assembly: A Silicon Based Metasurface Fabrication	407
<i>Juan Xin, Julien Proust, Jérôme Plain</i>	
Two-Dimensional Epitaxial Xenes: Genesis, Synthesis, Main Properties, and Processing Paths for Technology Applications	409
<i>Alessandro Molle, Christian Martella, Carlo Grazianetti</i>	
Role of Precursors Chemistry on the Growth and Band Alignment of Few-Layers MoS ₂ from Liquid Chemical Vapor Deposition	411
<i>Pinaka Pani Tummala, Alessandro Cataldo, Christian Martella, Gabriele Ferrini, Carlo Spartaco Casari, Alessandro Molle, Valeri Afanas'Ev, Alessio Lamperti</i>	
Dielectric Confined Nickel-Titanium Germano-Silicide Junctions to SiGe Nanochannels	416
<i>Christoph Beyer, Giulio Galderisi, Thomas Mikolajick, Jens Trommer</i>	
MEMS-Type Gas Sensors Using Metal Oxides Semiconductor	421
<i>Kengo Shimanoe, Koichi Suematsu, Ken Watanabe</i>	

Non-Invasive, Pain-Free, Blood-Free Sensing of Physiological Biomarkers Using a Flexible Transdermal Patch	423
<i>Daniel O'Brien, Darrian Mills, Joseph Farina, Shreyas Ambarkar, Maya Lall, Makarand Paranjape</i>	
Biocompatible and Flexible Piezoelectric Thin Film Materials and Devices for Skin Compliant Transducers.....	428
<i>Vincenzo Mariano Mastronardi, Gaia De Marzo, Luca Fachechi, Francesco Rizzi, Suleyman M. Demir, Angela Tafadzawa Shumba, Valentina Antonaci, Maria Teresa Todaro, Roberto De Fazio, Luigi Patrono, Paolo Visconti, Massimo De Vittorio</i>	
Flexible Broad-Range Graphene-Based Piezoresistive Pressure Sensor.....	434
<i>S. L. Mansouri, B. Ali, N. Faramarzi, U. Farooq, A. G. D'Aloia, A. Tamburrano, H. C. Bidsorkhi, M. S. Sarto</i>	
On the Performance of Low Power Cryogenic Electronics for Scalable Quantum Information Processors.....	440
<i>J. Knoch, B. Richstein, Y. Han, C. Jungemann, E. Icking, L. R. Schreiber, R. Xue, J.-S. Tu, T. Gökcel, J. Neugebauer, C. Stampfer, Q. T. Zhao</i>	
Ultrathin Germanium and Silicon-Germanium Nanosheet Transistors for Runtime Reconfigurable Electronics.....	446
<i>Walter M. Weber, Lukas Wind, Andreas Fuchsberger, Raphael Behrle, Daniele Nazari, Johannes Aberl, Enrique Prado Navarrete, Moritz Brehm, Masiar Sistani</i>	
3D FDTD-LLG Modelling of Magnetisation Dynamics in Thin Film Ferromagnetic Structures.....	448
<i>Feodor Y. Ogrin</i>	
Manipulation of the Electrical and Memory Device Properties of Monolayer MoS ₂ Field-Effect Transistors by Highly Charged Ion Irradiation	450
<i>S. Sleziona, A. Pelella, E. Faella, O. Kharsah, L. Skopinski, A. Maas, Y. Liebsch, A. Di Bartolomeo, M. Schleberger</i>	
Electrical Stress Induced Breakdown and Post Breakdown Physical Analysis of Mica Based Nano Capacitors.....	452
<i>Anirudh Maruvada, Sean J. O'Shea, Jie Deng, Shubhakar Kalya, Nagarajan Raghavan, Kin Leong Pey</i>	
Freestanding Nanomembranes from Materials Innovation to AI Hardware	457
<i>Sang-Hoon Bae</i>	
Development and Application of Surface Nanocomposites Based on Tightly Packed, Hexagonally Arranged Nanoparticle Ensembles	458
<i>Attila Bonyár, Tomáš Lednický, Rebeka Kovács, Shereen Zangana</i>	
Nanostructured Ferroelectric and Magnetocapacitive Thin Films.....	460
<i>Aleksander Matavž, Barbara Malic, Vid Bobnar</i>	
Comparative Analysis of InAs Adjacent Nanowire Sensors for Humidity and NO ₂ Detection.....	461
<i>Egit Musaev, Valeria Demontis, Francesco Rossella, Valentina Zannier, Lucia Sorba, Camilla Baratto</i>	
Pulsed Laser Deposited Cr ₄ Te ₅ Thin Films: A Quasi-Two-Dimensional Ferromagnetic Material	463
<i>Sandeep Kumar Chaluvadi, Shyni Punathum Chalil, Anupam Jana, Jun Fujii, Ivana Voborník, Giorgio Rossi, Pasquale Orgiani, Federico Mazzola</i>	

Nanomaterials for Titanium-Based Anodes in Sodium-Ion Batteries..... <i>S. Ghiyami, C. Mele</i>	465
Deep Learning-Designed Diffractive Materials for Optical Computing and Computational Imaging..... <i>Aydogan Ozcan</i>	471
Molecular Photonic Breadboards: Design of Biomimetic Light-Harvesting Structures for Active Control of Quantum Optics <i>Graham J. Leggett</i>	473
Hot-Electron Generators Based on Plasmonic Inverted-Pyramid Arrays for Solar-Energy Harvesting <i>Alejandro R. Goñi</i>	475
First Stages of Ultrathin Bi ₂ Se ₃ Film Physical Vapor Deposition Growth on SiO ₂ /Si Substrate: An Advanced X-Ray Spectromicroscopy..... <i>M. Azizinia, M. Salvato, M. Amati, L. Gregoratti, R. Parmar, S. J. Rezvani, P. Castrucci, R. Gunnella</i>	478
A Promising Alternative to Conventional EBL: UV Lithography with Direct Laser Writing for Josephson Junction Patterning..... <i>Alessio Verna, Luca Fasolo, Mario Zannoni, Andrea Giachero, Danilo Labranca, Luca Origo, Marco Faverzani, Roberto Moretti, Emanuele Enrico</i>	480
Development of Paper-Based Microfluidic Platform for Analysis of Cellular Crosstalk and Molecular Expression..... <i>Yun-Wen Tong, Kin Fong Lei</i>	482
Application of Cyclodextrin Based Polymers for the Gene Delivery..... <i>Yousef Monfared, Claudio Cecone, Adrian Matencio, Gjylije Hoti, Ilona Kabrikova, Ibrahim Hussein, Mohammed Desoky, Francesco Trotta</i>	484
Nanoelectronics for Immunotherapy <i>Anh Trang Nguyen Le, Larysa Baraban</i>	486
Novel Approaches to Acoustic Immunosensing of Extracellular Vesicles <i>Jugal Suthar, Esther Osarfo-Mensah, Alberto Alvarez-Fernandez, Beatriz Prieto-Simon, Stefano Angioletti-Uberti, Gareth R. Williams, Stefan Guldin</i>	488
Design and in Silico Validation of a Human Body on a Chip for Toxicity Assessment of Drugs to Prevent Graft-Versus-Host Disease <i>M. Lira Mario, L. Casado Fanny</i>	489
Unravelling the Mechanisms of Intracellular Antioxidant Activity of Platinum Nanozymes <i>Naym Blal, Vincenzo Migliaccio, Lillà Lionetti, Pier Paolo Pompa, Daniela Guarnieri</i>	494
Automated Flow Reactors for the Controlled Synthesis of Nanomaterials <i>John De Mello</i>	500
Chemistry for the Focused Electron and Ion Beam-Induced Deposition of Metal Nanostructures..... <i>Atul Chaudhary, Patrick Eckhert, D. Howard Fairbrother, Lisa McElwee-White</i>	501
Developments of Graphene Devices in 200 mm CMOS Pilot Line <i>M. Lukosius, R. Lukose, M. Lisker, P. K. Dubey, A. I. Raju, D. Capista, F. Majnoon, A. Mai, Ch. Wenger</i>	505

Advances in the Twistrionics of High Temperature Superconductors	507
<i>Nicola Poccia</i>	
Deposition of Ultra-Thin SiO ₂ Layers to Enable Core-Shell Nanostructure Architectures for Biosensing Applications	508
<i>P. Cannon, E. McGlynn, D. O'Neill, B. O'Connell, B. Freeland, J. Gaughran</i>	
Substrate Driven Strain Effects in LaVO ₃ Thin Films Grown by Pulsed Laser Deposition.....	510
<i>Shyni Punathum Chalil, Sandeep Kumar Chaluvali, Anupam Jana, Jun Fujii, Ivana Vobornik, Giorgio Rossi, Federico Mazzola, Pasquale Orgiani</i>	
Optomechanical Measurement of the Physical Properties of Individual Nanoparticles and Nanodroplets	512
<i>I. Favero</i>	
Towards an Optomechanical Photon-Noise Limited Thermal IR Detector	513
<i>Paolo Martini, Kostas Kanellopoulos, Silvan Schmid</i>	
Complex Oxides NanoMechanics	515
<i>Nicola Manca</i>	
Imaging MEMS Motion at Nano Scale by Time-Resolved Scanning Electron Microscopy.....	517
<i>Mohamed Zaghloul, Abbas Kosari Mehr, Riccardo Bertacco, Simone Cuccurullo, Federico Maspero, Giulia Pavese, Hao Chen, Aldo Ghisi, Alberto Corigliano, Silvia M. Pietralunga, Alberto Tagliaferri</i>	
Magnetic Order in 2D Antiferromagnets Disclosed by Spontaneous Anisotropic Magnetostriction	518
<i>Maurits J. A. Houmes, Gabriele Baglioni, Makars Šiškins, Martin Lee, Dorye L. Esteras, Alberto M. Ruiz, Samuel Mañas-Valero, Carla Boix-Constant, Jose J. Baldoví, Eugenio Coronado, Yaroslav M. Blanter, Peter G. Steeneken, Herre S. J. Van Der Zant</i>	
Exploring the Impact of Absorber Material on the Performance of a Terahertz Microbolometer by Finite Element Analysis.....	520
<i>Monica La Mura, Patrizia Lamberti, Vincenzo Tucci, Justinas Jorudas, Maria Cojocari, Georgy Fedorov, Polina Kuzhir</i>	
Emergent Spintronic Devices Integrating 2D Semiconductors with Functional Magnetic Materials	525
<i>Keke He, Peter A. Dowben, Jonathan P. Bird</i>	
A Bio-Photoelectrolytic Organic Semiconductor Platform for Measurement and Control of Proliferation and Behaviour of Living Cells Using Light Pulses	527
<i>M. Ciocca, S. Marcozzi, P. Mariani, V. Lacconi, A. Di Carlo, L. Cinà, M. D. Rosato-Siri, A. Zanon, G. Cattelan, E. Avancini, P. Lugli, S. Priya, A. Camaioni, T. M. Brown</i>	
Oxidation of van-Der-Waals Semiconductors for Neuromorphic Technology	529
<i>Aferdita Xhameni, Abdulaziz Almutairi, Antonio Lombardo</i>	
Exploration of Chitosan as an Active Material in Eco-Friendly ReRAM Devices.....	532
<i>Anil Lodhi, Anurag Dwivedi, Shalu Saini, Arpit Khandelwal, Shree Prakash Tiwari</i>	
Sputter-Deposited β-Ga ₂ O ₃ Films with Al Top Electrodes for Resistive Random Access Memory Technology	536
<i>Aman Baunthiyal, Jon-Olaf Krisponeit, Alexander Karg, Seyed Majid Mahdian, Marco Schowalter, Thorsten Mehrtens, Martin Eickhoff, Andreas Rosenauer, Jens Falta</i>	
From Molecular to Nanoscale Control of Organic Semiconductors for Biosensing Applications	541
<i>Christian B. Nielsen</i>	

Electronic and Optoelectronic Devices Based 2D Transition Metal Dichalcogenides Monolayers and Their Heterostructures	543
<i>Andrey Turchanin</i>	
Development of Low-Power and Environmentally Friendly Temperature Sensor Based on Gelatin-Graphene Nanocomposite	545
<i>Giovanni Landi, Carlo Barone, Veronica Granata, Guerino Avallone, Costantino Mauro, Sergio Pagano, Luca La Notte, Alessandro Lorenzo Palma, Paolo Sdringola, Giovanni Puglisi</i>	
Magnetic 2D Materials: Studying and Manipulating Ordered Spins in Flatland.....	550
<i>Efrén Navarro-Moratalla</i>	
Topological Regime Study in Bi ₂ Se ₃ Thin Films Through Electric Transport and Low-Frequency Electric Noise	552
<i>Veronica Granata, Carlo Barone, Pasquale Orgiani, Giovanni Carapella, Sandeep Kumar Chaluvadi, Sergio Pagano</i>	
Electric Transport Properties in Few-Layers WTe ₂ Field Effect Transistors Affected by Temperature.....	553
<i>E. Faella, L. Viscardi, K. Intonti, O. Durante, A. Pelella, M. Safar Alghamdi, M. Ali Alshehri, P. Lamberti, F. Ogrin, M. F. Craciun, S. Russo, A. Di Bartolomeo</i>	
Nano-Structured Buffer Layers for Defect Reduction in Heteroepitaxial Growth of Infrared Optoelectronic Materials	558
<i>Wenwu Pan, Renjie Gu, Gilberto A. Umana-Membreno, Jarek Antoszewski, Wen Lei, Lorenzo Faraone</i>	
Enhancing the Purcell Factor at Telecom Wavelengths by Means of a Photonic-Plasmonic Hybrid Cavity	559
<i>Ángela Barreda, Laura Mercadé, Mario Zapata-Herrera, Javier Aizpurua, Alejandro Martínez</i>	
Tailoring III-V Nanowires' Bandgap on Demand for Novel Single Photon Sources and Quantum Emitters	561
<i>Marta De Luca</i>	
Hot Carrier Generation in Metallic Nanoparticles.....	563
<i>Johannes Lischner</i>	
Exploration of Light and Temperature Sensing Capabilities of Solution Processed Flexible Organic Transistors	564
<i>Somnath Bhattacharjee, Naveen Kolluru, Zhuang Miao, Gargi Konwar, Daniel Neumaier, Shree Prakash Tiwari</i>	
Tight Binding Simulation of Laser-Assisted Ultrafast Field-Emission from Correlated Metal.....	569
<i>Luciano Jacopo D'Onofrio, Adolfo Avella, Martin Eckstein</i>	
Labs and Organs on Chip for Health and Environment.....	570
<i>Albert Van Den Berg</i>	
Molecular Characterization and DNA-Sensing Using Graphene Electrochemical Devices Under Illumination	571
<i>Pedro Alpuim, Edgar Pinzón, Laís C. Lopes, Telma Domingues, Jérôme Borme, Erika Godoy, M. Manuela M. Raposo, Paulo R. Bueno</i>	
Nanostructured Films with Nanocolumns and Nanoparticles: Fundamentals and Applications	573
<i>José Miguel García-Martín, Lidia Martínez, Yves Huttel</i>	

Computational Modeling of Complex Nanosystems for Drug Delivery, Targeting and Imaging	574
<i>Cristiana Di Valentin</i>	
Construction of Natural Active Small Molecules and Curcumin Nanomaterials	576
<i>Ying Han, Shiyao Fu, Xin Yang</i>	
Synthetic Semimetallic 2D Materials and Their Application in Miniaturized Energy Devices.....	580
<i>Cecilia Mattevi</i>	
Dependence of Built-In Tensile Strain on Lateral Size of Monolayer MoS ₂ Grown on Standard SiO ₂ /Si Substrates by Liquid Precursor Chemical Vapor Deposition.....	581
<i>L. Seravalli, F. Esposito, M. Bosi, L. Aversa, G. Trevisi, R. Verucchi, L. Lazzarini, F. Rossi, F. Fabbri</i>	
One Pot Synthesis of Poly Acrylic Acid Hydrogels for Technological Applications	583
<i>A. Melchiorre, M. Abrami, E. Sieni, M. Grassi, P. Posocco, S. Copelli</i>	
Effect of Surface Functionalization of Single-Walled Carbon Nanotubes (SWCNT) on Mechanical Properties of Ultra-Low Weight Percent SWCNT Reinforced PDMS Composite Thin Films.....	589
<i>Pavithra Ananthasubramanian, Rahul Sahay, Nagarajan Raghavan</i>	
Reliable Fabrication Techniques of SiNW Based Nanosensors.....	595
<i>Bruce Kim, M. Aleem, T. Selvarathinam, S. Kundu, J. H. Lee, J. Park</i>	
Synthesis of Calcium Fluoride Nanoparticles from Waste Hexafluorisilicic Acid of Fertilizer Industry.....	600
<i>Aditya Abburi</i>	
Materials-To-Applications Evaluation Framework: Assessing Memristor Technologies for Neural Network Implementations	603
<i>G. Bersuker, J. Farmer, D. Veksler, A.-M. El-Sayed, T. Durrant, D. Z. Gao, A. Shluger</i>	
Dynamic Modeling of Quantum Optoelectronic Devices	608
<i>Christian Jirauschek</i>	
Spin and Orbital Sources of Berry Curvature at Oxides Interface.....	613
<i>Maria Teresa Mercaldo</i>	
An Intriguing Case of Anomalous Thermal Transport in Cs ₂ NaYbCl ₆ Double-Halide Perovskite.....	615
<i>Antonio Cappai, Claudio Melis, Luciano Colombo</i>	
Insights into the Ultra-Steep Subthreshold Slope Gate-All-Around Feedback-FET for Memory and Sensing Applications	617
<i>Naveen Kumar, Ankit Dixit, Ali Rezaei, Tapas Dutta, César Pascual García, Vihar Georgiev</i>	
Semiconductors' Miniaturization Through Time: From Moore's Law to Eroom's Law?.....	621
<i>Nicola De Liso, Serena Arima, Antonio Troisi, Giovanni Filatrella</i>	
Progress Towards the Competitive Multiferroic Molecular Transistor.....	626
<i>P. A. Dowben, Esha Mishra, Thilini K. Ekanayaka, Ruihua Cheng</i>	
Insulators for Devices Based on 2D Materials	628
<i>T. Grasser, D. Waldhör, T. Knobloch</i>	
Microwave Emission from Spin Centres in Carbon-Based Materials	629
<i>Alberto Ghirri</i>	

A Process Tuning Analysis for the Three-Independent-Gate Field-Effect Transistor.....	630
<i>Patsy Cadareanu, Olivia Thu Lam, Pierre-Emmanuel Gaillardon</i>	
Carbon Nanotube-Based Flexible High-Speed Circuits with Sub-Nanosecond Stage Delays	634
<i>Guanhua Long, Wanlin Jin, Yuru Wang, Tianshun Bai, Youfan Hu</i>	
Memristive Nanodevices and Arrays for Brain-Inspired Computing	635
<i>Qiangfei Xia</i>	
Inorganic Nanotubes: From WS ₂ to “misfit” Compounds: From Basic Science to Applications.....	636
<i>R. Tenne</i>	
Recent Advances in Scintillation Materials: Nanomaterials X-Ray Imaging Screens with Exceptional Spatial Resolution.....	639
<i>Omar F. Mohammed</i>	
Experimental Measurement of the Thermal Boundary Resistance at the Interface of Carbon Nanotubes with Ultrafast Optical Spectroscopy.....	640
<i>Alessandro Casto, Margherita Vittucci, Francesco Maria Bellussi, Michele Diego, Fabien Vialla, Aurelien Crut, Matteo Fasano, Fabrice Vallée, Natalia Del Fatti, Francesco Banfi, Paolo Maioli</i>	
Effect of Potential Disorder on the Shot Noise Properties of Graphene Ribbons.....	641
<i>Paolo Marconcini, Demetrio Logoteta, Massimo Macucci</i>	
In Silico Design of Advanced Graphene-Based Nanodevices.....	647
<i>L Bellucci, G Menichetti, F Delfino, Z G Fthenakis, T T Mamo, V Tozzini</i>	
Thermal and Signal Integrity Improvement in a 3D RRAM Crossbar with Carbon Nanotube Interconnects	648
<i>Khitem Lahbacha, Fakhreddine Zayer, Hamdi Belgacem, Wael Dghais, Antonio Maffucci</i>	
Solution-Processable Carbon Nanotubes for Sensing and Biosensing Applications	655
<i>P. Lugli, M. Petrelli, B. Shkodra, S. Vasquez, A. Nijkoops, G. Elli, A. Tagliaferri, M. Ciocca, A. Douaki, P. Ibba, M. A. Costa Angeli, L. Petti</i>	
Unconventional Formation of a Zintl Compound in Nanowire Form	660
<i>Man Suk Song, Lothar Houben, Nadav Rothem, Xi Wang, Beena Kalisky, Magdalena A. Zaluska-Kotur, Hyeonhu Bae, Binghai Yan, Ryszard Buczko, Perla Kacman, Haim Beidenkopf, Hadas Shtrikman</i>	
Hybrid Point-Of-Care Devices for High-Sensitivity Visual Detection of Salivary Biomarkers and Drugs	661
<i>T. Pomili, P. P. Pompa</i>	
Self-Powered Room Temperature Nanowire Array NO ₂ Sensor	662
<i>S. Wei, Z. Li, K. Murugappan, Z. Y. Li, F. Zhang, M. Lysevych, H. H. Tan, C. Jagadish, A. Tricoli, L. Fu</i>	
Reusable Detector of ZnO-Based Transistor in Floating Gate Structure for High Sensitivity pH Sensor	664
<i>Yen Shuo Chen, Hsin Chiang You, Ching Chang Lin, Fu Hsiang Ko</i>	
Room-Temperature Single-Photon Emission Using Strained Colloidal CdSe/CdS Nanocrystals.....	668
<i>I. Moreels</i>	

Electrostatically Defined Graphene Quantum Dots.....	670
<i>Chuyao Tong, Rebekka Garreis, Wister Wei Huang, Lisa Maria Gächter, Max Josef Ruckriegel, Jonas Gerber, Annika Kurzmann, Thomas Ihn, Klaus Ensslin</i>	
Recent Progress in Silicene Growth on Inert Substrates	672
<i>P. Castrucci</i>	
Calibration-Free and High-Sensitivity Microwave Detectors Based on InAs/InP Nanowire Double Quantum Dots.....	674
<i>S. Cornia, V. Demontis, V. Zannier, L. Sorba, A. Ghirri, F. Rossella, M. Affronte</i>	
Multiwalled WS ₂ Nanotubes on Interdigitated Electrodes for Visible-Light Photodetectors.....	676
<i>Ofelia Durante, Sebastiano De Stefano, Daniele Capista, Maurizio Passacantando, Alla Zak, Filippo Giubileo, Luca Camilli, Antonio Di Bartolomeo Sr</i>	
Selective Surface Metallization of Single Crystal Silicon Nanowires Via Stencil Lithography.....	681
<i>B. Ali, M. Karimzadehkhouei, M. N. Esfahani, Y. Leblebici, B. E. Alaca</i>	
From the Periodic Table to New Magnets: Climbing the Inverse Design Mountain.....	687
<i>Stefano Sanvito</i>	
Computational Design of Two-Dimensional Semiconductors and Heterostructures for Sustainable Electronics Applications	688
<i>Yee Sin Ang</i>	
Multiphysics Modelling of Quantum-EM Transport in Ballistic Graphene Devices.....	690
<i>Luca Pierantoni, Gian Marco Zampa, Davide Mencarelli</i>	
Multiscale Approaches for Electronic Device Simulation.....	692
<i>Matthias Auf Der Maur, Anh-Luan Phan, Daniele Soccodato, Alessia Di Vito, Alessandro Pecchia</i>	
Elucidating Defect Effects on Surface Diffusivity and Enhanced Electromigration Resistance Using Density Functional Theory	694
<i>Hsin-Yi Tiffany Chen, Hsin-Yu Chen, Chien-Neng Liao</i>	
Modeling the Dynamic Characteristics of Metal-Insulator-Semiconductor Based Non-Volatile Memories.....	698
<i>Anupam Yedida, S N Teja, Vanshaj Sharma, Revathy Padmanabhan</i>	
Probing Single Molecule Magnets with Graphene Quantum Dots.....	703
<i>A. Alqahtani, D. Henry, L. St Marie, L. Havlicek, J. Hruby, A. Sojka, J. Navarro, R. Myers-Ward, D. K. Gaskill, A. El Fatimy, A. Liu, I. Nemec, P. Neugebauer, P. Barbara</i>	
Evaluation of the Electrical and Thermal Conductivity of Graphene Nanoplatelets Thin Films.....	705
<i>S. Sibilia, G. Giovinco, A. Maffucci</i>	
Quenching of the Band Gap of Two-Dimensional Semiconductors with a Perpendicular Electric Field.....	709
<i>Daniil Domaretskiy, Marc Philippi, Marco Gibertini, Nicolas Ubrig, Ignacio Gutiérrez-Lezama, Alberto F. Morpurgo</i>	
Microstructural Features and Crystallographic Texture of Sn3.5Ag Solder Joints Produced with Fe-Nanoparticle Doped Flux	711
<i>I. Wodak, F. Khodabakhshi, A. Yakymovych, G. Khatibi</i>	

Boron Ion Implantation-Induced Embedded Layers for Ultra-Thin Die Structures	717
<i>Yen Shuo Chen, Tzu Wei Chiu, Yu Chien Ko, Hua Tai Fan, Yi Cheng Huang, Fu Hsiang Ko</i>	
RIS with Nanomaterials for FutureG Applications.....	721
<i>Ghaleb Saleh Ghaleb Al-Duhni, Tatiana Valera, Markondeya Raj Pulugurtha, John L. Volakis, Satheesh B. Venkatakrishnan</i>	
Magnetic Phases in Ultraclean Gapped Bilayer Graphene	726
<i>B. Beschoten</i>	
Phase-Change Materials for Neuromorphic Computing.....	728
<i>R. Mazzarello</i>	
Spiking Neuron Circuits for Thin Film Technologies	729
<i>Laurie E. Calvet, Zonglong Li, Djamal Zilal, Yvan Bonnassieux, Benjamin Ihiguez Nicolau, Krunoslav Romanjek, Lina Kadura</i>	
Low-Power Pattern Recognition System Using Spintronics Compute-In-Memory Architecture	730
<i>Sonal Shreya, Yaseer Rezaeian, Maryam Sadeghi, Brajesh Kaushik, Farshad Moradi</i>	
Simulating Kondo Quantum Dots on NISQ Devices	735
<i>Giuseppe De Riso, Vincenzo Bisogno, Francesco Cipriani, Marco Lo Schiavo, Lorenzo Villani, Alfonso Romano, Canio Noce</i>	
Testing the Variational Quantum Eigensolver on the Four-Site Heisenberg Model	740
<i>Lorenzo Villani, Vincenzo Bisogno, Giuseppe De Riso, Vincenzo Bruno, Alfonso Romano, Canio Noce</i>	
Theoretical Characterization of 2D and 1D Unconventional Systems for Future Quantum Technologies: From On-Surface Carbon Networks to Position-Controlled Point Defects in Semiconductors.	746
<i>Simona Achilli, Giovanni Onida, Enrico Prati</i>	
Quantum Information with Photons and Nanomaterials	748
<i>A. Salamon</i>	
Molten Carbonate CCUS (Carbon Capture, Utilization and Storage) Transformation of the Green House Gas CO ₂ to Graphitic Nanomaterials.....	749
<i>Stuart Licht</i>	
Recent Developments in Raman and IR Spectroscopy of Graphene Materials.....	751
<i>Matteo Tommasini</i>	
Nanodiamonds for Sensing Applications.....	753
<i>Yaroslau Padrez, Lena Golubewa, Anastasiya Bahdanava, Renata Karpicz, Tatsiana Kulahava</i>	
Tuning of Surface Chemical and Optical Properties of Nanodiamonds for Biosensing and Drug Delivery Applications.....	755
<i>Pietro Aprà, S. Arpicco, V. Bincoletto, E. Bernardi, E. Moreva, M. Genovese, J. Kopecka, E. Losero, L. Mino, P. Olivero, C. Riganti, C. Stella, S. Sturari, P. Traina, V. Varzi, G. Zanelli, F. Picollo</i>	
Monolithic Micro LED/ Semiconductor Metal Oxide Sensor Towards Ultra-Low-Power and Intelligent Gas Sensing.....	757
<i>Inkyu Park</i>	

Chemiresistive Response to 2,4,6 Trinitrotoluene Vapors of Large Area Arrays of Ge Nanowires	759
<i>Claudio Ferrari, Paola Frigeri, Enos Gombia, Matteo Bosi, Giovanna Trevisi, Luca Seravalli</i>	
Novel Strain Release Self-Assembly Design of Silver Nanowires and Application in Flexible Strain Sensors	761
<i>Yen Shuo Chen, Yu Chien Ko, Hua Tai Fan, Ching Chang Lin, Fu Hsiang Ko</i>	
Comparison of Bolometer Type Room Temperature Photodetectors, Based on MWCNTs, Combined with Tobacco Cells Or Embedded in a Polymer Matrix.....	766
<i>Heinz-Christoph Neitzert, Giovanni Landi</i>	
A Hybrid Superconductor/Nanomechanical Magnetic Field Detector for Biomagnetism	770
<i>L. Pellegrino, N. Manca, A. Plaza, L. Cichetto, D. Marré, F. Maspero, S. Cuccurullo, R. Bertacco, E. Wahlberg, A. Kalaboukhov, F. Lombardi, T. Hänke, D. Mungpara, A. Schwarz, I. Hilschenz, E. Ragucci, S. Spadone, W. Venstra, S. Della Penna</i>	
Probing the Electronic Structure of Graphene Moiré Superlattices by Terahertz Radiation	772
<i>José M. Caridad, Juan A. Delgado-Notario</i>	
InAs Nanowire Field-Effect Transistors: Temperature Dependence of Electrical Properties and Digital Electronic Applications	773
<i>L. Viscardi, E. Faella, K. Intonti, F. Giubileo, V. Demontis, D. Prete, V. Zannier, L. Sorba, F. Rossella, P. Romano, A. Di Bartolomeo</i>	
Probing Electrical Transport Properties of Ultra-Low Thermal Conductivity SnCr ₂ S ₄ Nanowhiskers	778
<i>Alberta Carella, Domenic Prete, Claudia Menozzi, Florentine Guiot, Leonardo Martini, Carmelo Prestipino, Francesco Rossella</i>	
Novel Materials and Methods for Fabricating Memristors for Use in RF Applications.....	779
<i>Evangelos Tsipas, Emmanouil Stavroulakis, Ioannis K. Chatzipaschalidis, Konstantinos Rallis, Nikolaos Vasileiadis, Panagiotis Dimitraklis, Athanasios Kostopoulos, George Konstantinidis, Georgios Ch. Sirakoulis</i>	
Impact of Counter-Electrode and Device Architecture on the Gating Performance of Iontronic Transistors	785
<i>Arslan Liaquat, Alberta Carella, Domenic Prete, Valeria Demontis, Leonardo Martini, Claudia Menozzi, Francesco Rossella</i>	
Direct Synthesis of Silicon Wires on a Polymer Substrate Without the Substrate Heating Using Hot-Wire-Enabled VLS Method.....	787
<i>Nitin Arya, Shreyas Pethe, Rajiv O. Dusane</i>	
Compact Modeling of Resistive Switching Memory (RRAM) with Voltage and Temperature Dependences.....	793
<i>A. Glukhov, D. Bridarolli, S. Ricci, R. Li, S. Shreya, H. Farkhani, F. Moradi, D. Ielmini</i>	
Multiscale Modelling of Resistive Switching in Gold Nanogranular Films.....	798
<i>Miquel López-Suárez, Claudio Melis, Luciano Colombo, Walter Tarantino</i>	
A Multiscale-Multiphysics Simulation Platform for Technology Virtualization: From Process Chamber Modeling to Device Electrical Prediction	805
<i>L. Larcher, F. Nardi, V. Milo, U. Kelkar, P. Stout, M. Haverty, S. Gangopadhyay</i>	
Integrated Graphene/Silicon Quantum Photonics Waveguides with Polarization Control.....	810
<i>S. Cammarata, A. Fontana, V. Vitali, D. Prete, A. E. Kaplan, T. H. Dao, C. Lacava, V. Demontis, S. Iadanza, F. De Matteis, E. Pedreschi, G. Magazzù, A. Toncelli, F. Spinella, S. Saponara, R. Gunnella, F. Rossella, A. Salamon, V Bellani</i>	

Analytical Model for Monolayer Phosphorene DG-FETs in the Ballistic Regime.....	811
<i>Adelcio M. De Souza, Daniel R. Celino, Murilo A. Romero</i>	
Nanophononics: From nm-Thick Membranes to Circuit Components.....	815
<i>Clivia M. Sotomayor Torres</i>	
Hybrid 0D/2D Metamaterials with Room-Temperature Ferromagnetism	817
<i>Nalaka Kapuruge, Tyler Alba, Kinga Lasek, Noah Schulz, Yasinthara Wadumesthri, Florence A. Nugera, Valery Ortiz Jimenez, Robert Hyde, Jianjun Pan, Hariharan Srikanth, Manh-Huong Phan, Humberto Rodriguez Gutierrez</i>	
Boosting Electrical Output of Triboelectric Nanogenerators (TENGs) by Adapting Fringing Effect for Self-Powering Devices	819
<i>Teresa Cheng, Ling Yang, Xiaoning Jiang, Xiaoying Zhuang</i>	
Corrosion Behavior of Pure Magnesium on Different Crystallographic Structure.....	820
<i>Tamaki Hanayama, Shoichiro Yoshihara, Eitaro Yukutake, Bryan J. Macdonald</i>	
Photoacoustic Emission Efficiency of Polymer Matrix Nanocomposites for Use in Epiretinal Prosthetics	824
<i>James B. Spicer, Hyunwoo Song, Alexandra L. Patterson, Jeeun Kang, Emad M. Boctor</i>	
High Frequency Optoelectromechanical Nanocrystalline Silicon Nanobeams	829
<i>S. Pourjamal, O. Ylivaara, L. Mercadé, T. Makkonen, A. Martinez, J. Ahopelto</i>	
Materializing Cognition : Information Processing in Cognitive Matter	831
<i>Wilfred G. Van Der Wiel</i>	
Materials Science Problems in the Fabrication of Superconducting Qubit Devices.....	832
<i>Mingzhao Liu</i>	
A Quantum Simulator to Emulate Molecular Structure.....	833
<i>Brian Kiraly</i>	
Elementary Excitations of Quantum Emitters in Two-Dimensional Hexagonal Boron Nitride	834
<i>Gabriele Grosso, Enrique Mejia, John M. Wood, Saroj B. Chand, Jonathan Pelliciari, Yanhong Gu, Jiemin Li, Shiyu Fan, Valentina Bisogni</i>	
Enhancing Image Segmentation Performance with MRAM Based Processing-In-Memory Architecture.....	836
<i>Partha Kaushik, Amit Monga, Hemkant Nehete, Brajesh Kumar Kaushik</i>	
Machine Learning-Assisted Analysis of Advanced STDP for Neuromorphic Computing Using MRAM	842
<i>Anubha Sehgal, Gaurav Verma, Seema Dhull, Sourajeet Roy, Brajesh Kumar Kaushik</i>	
Photo Sensing Analysis of T-Shape TFET Sensor Under Visible Range of Spectrum	850
<i>Shreyas Tiwari, Rajesh Saha</i>	
Biological Nanofibers with Record Intrinsic Electrical Properties – Towards e-Biologics	859
<i>R Bonné, R. T Eachembadi, K Wouters, J. V Manca</i>	
Unveiling the Charge Transport Mechanisms in Covalently Interconnected Solution-Processed MoS ₂ Electronic Devices.....	861
<i>Francesca Urban, Stefano Ippolito, Paolo Samori</i>	

Ink-Jet Printed Graphene-Silicon Schottky Diodes	863
<i>Alessandro Grillo, Zixing Peng, Aniello Pelella, Antonio Di Bartolomeo, Cinzia Casiraghi</i>	
Printing Technologies for Sustainable Electronics and Energy Storage Manufacturing	864
<i>R. Sliz, E. Hannila, J. Välikangas, S. Illikainen, I. S. Roy, H. H. Nguyen, U. Lassi, T. Fabritius</i>	
Sharp Ballistic Graphene P-N Junction at Room Temperature Using Zn Metal Doping of Graphene	870
<i>I. Leontis, G. A. Prando, K. A. Anastasiou, A. Bacon, M. Craciun, S. Russo</i>	
Electrochemical Properties of Sustainable Nanomaterial-Based Supercapacitors	872
<i>Guerino Avallone, Giovanni Landi, Veronica Granata, Luca La Notte, Alessandro Lorenzo Palma, Paolo Sdringola, Giovanni Carapella, Giovanni Puglisi, Sergio Pagano, Carlo Barone</i>	
Nanostructured OLED Photonics	877
<i>Franky So</i>	
Optical Investigation of Thermal Energy Exchanges Between a Single Nano-Object and Its Environment	878
<i>Clément Panais, Noëlle Lascoux, Francesco Banfi, Paolo Maioli, Fabrice Vallée, Aurélien Crut, Natalia Del Fatti</i>	
Robust Measurement of Nanowire Laser Performance Across 6 Designs Using Experimental Big-Data	880
<i>Stephen A. Church, Nikesh Patel, Ruqaiya Al-Abri, Nawal Al-Amairi, Aswani G. S. Vilasam, Hoe Tan, Chennupati Jagadish, Yunyan Zhang, Huiyun Liu, Francesco Vitale, Carsten Ronning, Nian Jiang, Hannah Joyce, Patrick Parkinson</i>	
Dynamic Nanoassemblies for Imaging and Therapy of Targeted Glioma	881
<i>Shiyao Fu, Ying Han, Xin Yang</i>	
Photo-Induced Fermi Level Modulation of Graphene FETs: Expression Mechanism and Potential as Chemical Sensors	883
<i>Yoshiaki Sugizaki, Yasutaka Nishida, Akiko Yuzawa, Miyu Nagai, Hiroko Miki, Hiroshi Hamasaki, Kazunori Motai, Yuhei Hayamizu, Miyuki Tabata, Yuji Miyahara, Atsunobu Isobayashi, Hideki Shibata, Hideyuki Tomizawa</i>	
Mapping Electronic Transport in Ge Nanowire SBFETs: From Tunneling to NDR	889
<i>Raphael Behrle, Martina Bažíková, Sven Barth, Walter M. Weber, Masiar Sistani</i>	
Challenges for Ultrathin Film Optimization for High Performance Magnetic Sensors.....	895
<i>Susana Cardoso, Pedro Araújo, Francisco Matos, Sofia Abrunhosa, Paulo Freitas, Rita Macedo</i>	
From Si to MoS ₂ – Device Simulation Based on the Direct Solution of the Boltzmann Transport Equation	896
<i>Z. Stanojevic, C.-M. Tsai, J. M. Gonzalez Medina, L.-C. Hung, M. Karner</i>	
Highly Efficient Atomistic Simulations of Laterally Inhomogeneous Devices Using the Non-Equilibrium Green's Function Method	899
<i>Mincheol Shin, Seonghyeok Jeon</i>	
Simulation of Graphene-Based Materials and Devices for Sub-Terahertz Applications	901
<i>Monica La Mura, Patrizia Lamberti, Vincenzo Tucci</i>	
Compact Modeling of Spintronics Devices for Application-Based Circuit-Level Simulation	906
<i>Sonal Shreya</i>	

Nonlinear Chiral Plasmonics in Two-Dimensional Dirac Materials.....	908
<i>Pedro Cosme, Hugo Terças, Vasco Santos</i>	
Multiscale Crack Initiator Enabled Icephobic Surfaces.....	913
<i>Jianying He</i>	
Quantum Chemical Modeling in Nanoscience: From Understanding the Basics of the Theory of the Structure of Matter to Solving Applied Problems	914
<i>Maksim Shundalau, Yuliya Osika, Patrizia Lamberti</i>	
Principal Component Analysis of Raman Spectra of Carbon Nanotubes in Cancer Cells: Accumulation, Distribution, and Type Discrimination.....	916
<i>Lena Golubewa, Igor Timoshchenko, Tatsiana Kulahava</i>	
Role of Research and Technology Organizations (RTOs) in the Education of Specialists for Nanotechnology.....	918
<i>Lena Golubewa, Renata Karpicz, Gintaras Valušis</i>	

Author Index