

# Program

## 3<sup>rd</sup> International Conference on Materials Science and Nanotechnology 2019 (MSNANO-19)

Day 1 18 <sup>th</sup> February, 2019			
08:00-10:00	Registration		
<b>10:00-11:10</b>	<b>Inaugural Session</b>		
10:00	Guests to be seated		
10:00-10:10	Recitation from the Holy Quran & Naat-e- Rasool (P.B.U.H)		
10:10-10:15	Welcome & Introduction: <b>Prof. Dr. Nasir Amin</b> , Vice Chancellor, Government College University Faisalabad		
10:15-10:55	<b>Plenary talk: Prof. Dr. Ya-Hong Xie (USA)</b>  <i>“An Important New Tool in Bio-sensing: Tertiary Proteomics “</i>		
10:55-11:05	Remarks by Chief Guest: <b>Mr. Mian Farrukh Habib</b> , Parliamentary Secretary		
11:05-11:10	<b>Group Photo</b>		
<b>11:10-11:30</b>	<b>Refreshment Break</b>		
	<b>Parallel Session I</b> <b>Quaid-e-Azam Auditorium, Hall I</b>	<b>Parallel Session II</b> <b>Quaid-e-Azam Auditorium, Hall II</b>	<b>Parallel Session III</b> <b>STC Hall III</b>
	<b>Session Chair:</b> <b>Prof. Dr. M. Asghar Hashmi</b>	<b>Session Chair:</b> <b>Dr. Faisal Iqbal</b>	<b>Session Chair:</b> <b>Prof. Dr. Zafar Ilyas</b>
11:30-12:00	<b>Prof. Dr. Levent Trabzon (Turkey)</b>  <i>“Fabrication and Characterization of Nanofiller Reinforced Polyurethane Nanocomposites”</i>	<b>Dr. Malika Rani (Multan)</b>  TBA	<b>Dr. Richard Baker (UK)</b>  <i>“Ceria-based Materials for Applications in Solid Oxide Fuel Cells”</i>
12:00-12:20	<b>Dr. Ajab Khan Kasi (Queta)</b>  <i>“Fabrication of Triboelectric Nanogenerators using template assisted synthesis”</i>	<b>Shahid Adeel (Faisalabad)</b>  <i>“Influence of Ultrasonic radiation in isolation of bio colorant from coconut husk for bio-mordanted wool dyeing”</i>	<b>Dr. Sadia Muniza Faraz (Karachi)</b>  <i>Physical Modeling and Simulation of Nanostructure Electronic Devices</i>
12:20-12:40	<b>Dr. Zahir Iqbal (Sawabi)</b>  <i>“Ultraviolet-light-driven doping tunability and reversibility of exfoliated graphene based field effect transistors “</i>	<b>Sadat Majeed (Multan)</b>  <i>“Synthesis and applications of intermetallic nanoparticles and their carbon and silica containing nanocomposites”</i>	<b>Dr. Waheed S Khan (Faisalabad)</b>  <i>“Structure is more important than size: a paradigm shift in the development of nanomaterial based electrochemical sensor”</i>
12:40-13:00	<b>Dr. Tariq Sajad (UK)</b>  <i>“Engineered exciton diffusion length enhances device efficiency in small molecule photovoltaics”</i>	<b>Dr. Javaid Ahsan (Islamabad)</b>  <i>“vacuum technology in pakistan”</i>	<b>Dr. Murtaza Hasan (Bahawalpur)</b>  <i>“Morphological and Physiological response of Lactuca sativa exposed to silver nanoparticles”</i>

13:00-13:20	<b>Dr. Asma Hayat (Lahore)</b> <i>Femtosecond laser induced breakdown spectroscopy and surface analysis of metallic targets under various Ar pressures</i>	<b>Mr. M. Muqet (Jamshoro)</b> <i>"Adsorption properties of anionic cellulose nanofibers for the removal of hardness causing agents (Ca<sup>2+</sup> and Mg<sup>2+</sup>) from water"</i>	<b>Dr. Ishaq Ahmed (Islamabad)</b> <i>Electron and ion irradiation induced structural changes in ZnO nanowires</i>
<b>13:20-14:30</b>	<b>Lunch</b>		
	<b>Session Chair:</b> <b>Dr. Saeed Ahmed Buzdar</b>	<b>Session Chair:</b> <b>Dr. Naveed Aslam Malgani</b>	<b>Session Chair:</b> <b>Prof. Dr. Shahid Rafiq</b>
14:30-15:00	<b>Dr. M-A Hasan (USA)</b> <i>Epitaxial growth on nano-engineered surfaces and structures</i>	<b>Dr. Kamran Amin (Islamabad)</b> <i>"Carbonyl based polymers for long lasting flexible lithium ion batteries"</i>	<b>Prof. Dr. Chuanbao Cao (China)</b> <i>The Strategy to improve properties of Lithium Ion Battery</i>
15:00-15:15	<b>Dr. Jafar Khan Kasi (Quetta)</b> <i>"Natural Plants Dyes Extraction for the Dye Sensitized Solar Cell"</i>	<b>Dr. Hadia Noor (Lahore)</b> <i>"Impact of nano-ball milling on structural and dielectric properties of zinc aluminate"</i>	<b>Dr. Nida Iqbal (Lahore)</b> <i>"Synthesis and Characterization of Bioactive Calcium Phosphate Ceramics doped with various metal ions for Bone Repair Applications"</i>
15:15-15:30	<b>Dr. Nadia Akram (Faisalabad)</b> <i>Influence of Polyol on Adhesion Characteristics of Waterborne Polyurethane Pressure-Sensitive Adhesives</i>	<b>Dr. Rana Arif (Multan)</b> <i>"Ab initio Study of Structural and Spectroscopic Study of Perovskite Materials"</i>	<b>Dr. Amir Ullah (Peshawar)</b> <i>High Strain Response in Lead-Free BNKT-based Piezoelectric Ceramics</i>
15:30-15:45	<b>Faisal Mustafa (Islamabad)</b> <i>Thin film coating of Titanium Carbide for improved wear &amp; oxidation resistant properties of graphite</i>	<b>Irfan Nadeem (Islamabad)</b> <i>Laser surface texturing on an aerospace alloy with sub-micron size Ti/TiN coating</i>	<b>Shezeen Akhtar (Islamabad)</b> <i>Rapid solidification and laser surface alloying to generate thin metastable surface</i>
15:45-16:00	<b>Raheela Rasheed (Islamabad)</b> <i>Synthesis of silica-silica composite by infiltration of nano-size silica particles in 2D-silica fiber</i>	<b>M. Z. Arif (Islamabad)</b> <i>Study of thermal degradation of Molybdenum doped Lithium Vanadium Phosphate as cathode material for Lithium Ion Batteries</i>	<b>Dr. Mozamil Bhokhari (Quetta)</b> <i>TiO<sub>2</sub> nanowires membrane for water treatment</i>
16:00-17:00	<b>Tea and Poster Session</b>		

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<b>Day 2</b> <b>19<sup>th</sup> February, 2019</b>			
09:00	Guests to be seated		
	<b>Session Chair:</b> <b>Prof. Dr. Zafar Iqbal</b>		
09:30-10:05	<b>Dr. Jimmy Ng (USA)</b> <i>A Suspended Graphene Resonator for THz DC-to-AC Conversion</i>		
10:05-10:40	<b>Dr. J. B (S. Korea)</b> <i>Fundamentals of Scanning Electron Microscope and its manufacturing</i>		
10:40-11:15	<b>Prof. Dr. John Irvine (UK)</b> <i>Nanomaterials at the edge: Emergent nanoparticles</i>		
11:15-11:35	<b>Tea Break</b>		
	<b>Parallel Session I</b>  Hall I	<b>Parallel Session II</b>  Quaid-e-Azam Auditorium, Hall II	<b>Parallel Session III</b>  STC Hall III
	<b>Session Chair:</b> <b>Dr. Zahir Iqbal</b>	<b>Session Chair:</b> <b>Dr. Altaf Hussain</b>	<b>Session Chair:</b> <b>Dr. M. Azhar Khan</b>
11:35-12:00	<b>Dr. Won Ho Jung (South Korea)</b> <i>Dual beam plasma technology with adjustable charge for surface pretreatment</i>	<b>Dr. Abdul Ghafar Wattoo (RY Khan)</b> <i>Fabrication of Nanophotonic Structures as Broadband Super absorbers</i>	<b>Dr. Haydayt Ullah (Peshawar)</b> <i>“Crystallographic Point Groups, Space Groups and their inter-relationship</i>
12:00-12:20	<b>Dr. Rashid Jalil (Lahore)</b> <i>Graphene; fabrication modifications &amp; Applications</i>	<b>Dr. Zahid Usman (D.G Khan)</b> <i>“Prospects of Density Functional Theory in Materials Science</i>	<b>Dr. Zobia Ammer (Peshawar)</b> TBA
12:20-12:40	<b>Dr. M. Ashfaq (Lahore)</b> <i>Synthesis and Characterization of Semiconductor-GO Composite Materials for Solar Cells and fuel Cells</i>	<b>Hisham Alnasir (Islamabad)</b> <i>Size effects on magnetic anisotropy of Gd<sub>5</sub>Si<sub>4</sub> and Gd<sub>5</sub>(SixGe<sub>1-x</sub>)<sub>4</sub> nanoparticles and their applications in magnetic hyperthermia</i>	<b>Dr. Javed Iqbal (Lahore)</b> <i>The degradation mechanism in the polymer Field Effect Transistors due to moisture absorption in the active channel layer</i>
12:40-13:00	<b>Dr. Ghulam Nabi Watto (Gujrat)</b> <i>“Chemical Vapor Deposition (VCD): A Versatile Technique to Synthesize Various Nanostructures for Device Applications”</i>	<b>Misbah Hameed (Lahore)</b> <i>Development and Evaluation of nanofiberous dressing with Essential oil for enhanced antimicrobial activity in wound management</i>	<b>Dr. Dilawar Ali (Lahore)</b> <i>Role of annealing environment on the physical properties of In-doped ZnO thin films</i>
13:00-14:30	<b>Lunch</b>		
	<b>Session Chair:</b>	<b>Session Chair:</b>	<b>Session Chair:</b>

	<b>Dr. Hyadat Ullah</b>	<b>Dr. Noor Ul Ain</b>	<b>Dr. Hasan Murtaza</b>
14:30-14:50	<b>Dr. Faheem K. Butt (Lahore)</b> <i>“Novel ZnV2O4 Nanostructures as Prospective Energy Storage Materials</i>	<b>Qamar ul Islam (Germany)</b> “THz emission from semiconductors using excitation by a tilted pulse front	<b>Bushra Akhtar (Faisalabad)</b> <i>Role of polymeric nanoparticles in drug delivery</i>
14:50-15:10	<b>Hafiz Zeshan Mehmood (Brazil)</b> <i>Plasmonic Response of Gold- silica and silver- silica metalcore nanoshells by optimizing the figure of merit</i>	<b>M. Saeed (Faisalabad)</b> <i>Silver loaded alumina (Ag-Al<sub>2</sub>O<sub>3</sub>): An effective visible light active photo catalyst for aqueous phase degradation of methylene blue dye”</i>	<b>Dr. Faqir Muhammad (Faisalabad)</b> <i>Role of polymeric nanoparticles in biodetoxification</i>
15:10-15:30	<b>Dr. Imdad Ullah (Bannu)</b> <i>One Pot Synthesis of GO/ZnFerite Based Nanocomposit for Adsorption and Degradation Methylene</i>	<b>Arshi Khalid (Lahore)</b> <i>Electron Transporting Layers for High Efficiency Perovskite Solar Cells</i>	<b>Dr. Javeed Iqbal (Islamabad)</b> Intensity distributions of enhanced h emission from laser-induced low-pressure he plasma and a suggested he-assisted excitation mechanism
15:30-15:50	<b>Dr. Imran Aslam (Narowal)</b> Synthesis of WO <sub>3</sub> .H <sub>2</sub> O spherical particles for efficient photocatalytic properties under visible light source	<b>Tabassum Hussain (Faisalabad)</b> <i>Microwave Assisted Hydrothermal Synthesis of Aluminosilicate Materials via Recycling of Rice Husk Ash</i>	<b>Ms. Sadaf Aftab (UK)</b> <i>Stainless steel (SS) 316 foam as a catalyst for bleed air contamination</i>
18:00-20:00	<b>Cultural Night</b>		

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<b>Day 3 20<sup>th</sup> February, 2019</b>			
	<b>Session Chair Dr. Ajab Khan Kasi</b>	<b>Session Chair Dr. Muzamil Bokhari</b>	<b>Session Chair Dr. M. Farooq Warsi</b>
09:00-09:20	<b>Dr. Khurram S Joya (KSA)</b>  <i>Advanced Functional Nano Materials: Fabrication, Thin-Films, ElectroCatalysis, Sensing, Solar and Chemical Energy Conversion Application</i>	<b>09:00-09:10</b>  <b>Misbah Sultan (Lahore)</b>  <i>"Eco-friendly reduction of methylene blue with polyurethane catalyst"</i>	<b>Ms. Xinke Yu (USA)</b>  <i>Protein Secondary Structure Analysis using SERS Hybrid Platform</i>
		<b>09:10-09:20</b>  <b>Anum Amer (Islamabad)</b>  <i>Synthesis and Characterization of Nickel Oxide Nanostructures for Perovskite Solar Cell Application</i>	
09:20-09:35	<b>Dr. Umair Hasan (Islamabad)</b>  <i>"Stampable Microengineered Hydrogel Glucose Sensors"</i>	<b>Bushra Batool (Islamabad)</b>  <i>Sintering and pH effect on Low Temperature Processed Tin Oxide Nanoparticles for Perovskite Solar Cells Application</i>	<b>Dr. Sajad Hussain (Singapore)</b>  <i>Successive Melting of A Phase Change Material Mixed With Nano Inclusions When Bounded In A Finned Rectangular Domain</i>
09:35-09:50	<b>Dr. Waqar Mahmood (Rawalpindi)</b>  <i>"Role of AgI+ substitutional defects on the electronic and optical properties of n-type CdS thin films semiconductor for sustainable and stable window layer in solar cells technology"</i>	<b>Sundas Rais (Lahore)</b>  <i>"Transesterification of Neem Oil into Biodiesel Using Green Synthesized MgO and ZnO Nanoparticles As Catalyst"</i>	<b>Dr. Farooq Gujjar (Singapore)</b>  <i>"On Stability of Nanoparticles to Enhance Thermal Performance of MHD Nanofluid flow Over a Stretchable Rotating Disk with Bioconvection Effects"</i>
09:50-10:05	<b>Dr. Sabiha Jamal (Lahore)</b>  <i>A comparative study of Nickel thin films of nanoscale thickness, grown at different substrate temperatures</i>	<b>Dr. Shahzeb Zarar (Lahore)</b>  <i>"Nuclear reaction cross-sections and nuclear model calculations for the production of nb-89"</i>	<b>Dr. Fozia Irum (Lahore)</b>  <i>"Hemicelluloses as reducing and dispersing agents for fabrication of noble metals nanoparticles"</i>
10:05-10:25	<b>Tea</b>		
	<b>Session Chair: Prof. Dr. Ya-Hong Xie</b>		
10:25-10:50	<b>Dr. Yunsung Huh (South Korea)</b>  <i>Characteristics of an anode type ion beam source driven by a charge repulsion mechanism</i>		
10:50-11:20	<b>Prof. Dr. M. Zafar Iqbal (Islamabad )</b>  <i>Valleytronics-A new paradigm in information technology</i>		
11:20-12:00	<b>Closing Ceremony</b>		
12:00-13:00	<b>Lunch</b>		

## List of Poster Presentations

### 1. Thin Film Coating of Titanium Carbide for Improved Wear & Oxidation Resistant Properties of Graphite

Menahil Mahmood<sup>a\*</sup>, Faisal Mustafa<sup>a\*</sup>, Muhammad Farooq Zafar<sup>b</sup>, Syed Wilayat Husain<sup>a</sup>  
<sup>a</sup> Department of Materials Science & Engineering, Institute of Space Technology, Islamabad  
<sup>b</sup> Centre of Excellence for Advanced Science & Technology (CASTING)

### 2. Polyaniline-mwcnts for high performance supercapacitor application

Muhammad Tayyab Ahsan<sup>\*</sup>, Muhammad Aftab Akram  
Department of Materials and Surface Engineering  
School of Chemical & Materials Engineering,  
National University of Sciences and Technology (NUST), Islamabad

### 3. Composite Metal oxide for Phosphopeptides Enrichment from Complex Biological Fluid

Batool Fatima  
Department of Biochemistry, Bahauddin Zakariya University, Multan 60800, Pakistan.

### 4. Synthesis of Silica-Silica composite by infiltration of nano-size Silica particles in 2D-silica fibers

R. Rasheed, U. Saeed, I. Qazi, F. Awan  
Institute of Space Technology, Islamabad

### 5. A DFT Study of Structural, Electronic, Optical and Transport Properties of Pristine and Non-Stoichiometric BaZrO<sub>3</sub>

\*Farrukh Javed<sup>1</sup> and Syed Muhammad Alay-e-Abbas<sup>1</sup>  
<sup>1</sup>Computational Materials Modeling laboratory Department of Physics  
Government College University Faisalabad

### 6. Fabrication and Characterization of Thin multi-layer films for Transparent conducting oxides

Saad Ullah<sup>1</sup>  
<sup>1</sup>Bahauddin Zakariya University

### 7. Morphological and Physiological response of *Lactuca sativa* exposed to silver nanoparticles

Muhammad Akram, Kinza Mahmood, Khadium Hussain, Murtaza Hasan  
Department of Biochemistry & Biotechnology, The Islamia University of Bahawalpur

### 8. Structural Investigation of Molybdenum Lithium Vanadium Phosphate: a potential cathode material for lithium ion batteries

M. Z. Arif<sup>1,2</sup>, I. Ahmad<sup>1</sup>, M. Abdullah Khan<sup>2</sup>, N. Iqbal<sup>1</sup>  
<sup>1</sup>US-Pakistan Center for Advanced Studies in Energy, National University of Sciences and Technology, Pakistan.  
<sup>2</sup> Renewable Energy Advancement Laboratory, Department of Environmental Sciences, Quaid-i-Azam University, Pakistan.

### 9. Surface modified Iron Carbide Nanoparticles based harvesting Low Molecular Weight Biomarkers tumor inducing proteins

Huma Gulzar, Maryum Jabbar, Ayesha Malik, Murtaza Hassan<sup>\*</sup>  
Department of Biochemistry and Biotechnology, The Islamia University of Bahawalpur, Pakistan

### 10. Pseudo-SILAR based Synthesis of ZnO/ZnS Hierarchical Structure for Enhanced Photocatalytic Activity under UV-light

Talha Farooq Khan, Mohsin Muhyuddin, Syed Wilayat Husain, and Muhammad Abdul Basit  
Department of Materials Science & Engineering Institute of Space Technology (IST) Islamabad-44000, Pakistan

### 11. Synthesis and Characterization of Silver Doped ZnO Novel Nanocomposites with Sulphur Doped Graphitic Carbon Nitride and their Potential Applications

NAVEED AHMED<sup>a</sup>, MOHSIN JAVED<sup>a\*</sup>, UMBREEN KIRAN<sup>a</sup>, MUHAMMAD AZAM QAMAR<sup>a</sup>, MUDASSAR SHER<sup>a</sup>  
<sup>a</sup>Department of Chemistry, University of Management and Technology, Phase-II Johar Town, Lahore

### 12. Structural and morphological properties of laser irradiated CaHPO<sub>4</sub> biomaterial

Imtiaz U. Khawaja<sup>a\*</sup>, Aamir Rasheed<sup>b</sup>, Muhammad Farooq<sup>a</sup>, Muhammad Azhar Khan<sup>b</sup>  
<sup>a</sup>Department of Physics and Astronomy, Hazara University Mansehra-21300, Pakistan  
<sup>b</sup>Department of Chemistry, The Islamia University of Bahawalpur, Pakistan

### 13. Designing of Graphene-Supported TiO<sub>2</sub> Nanoparticles to Enhance the Performance of Perovskite Solar Cells

Nadia Rashid<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*</sup>, Wenxiu Que<sup>b</sup>  
<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan  
<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research,  
Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering,  
Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### 14. Zr-Doped TiO<sub>2</sub> Nanoparticles Synthesized via Sol-Gel Method to Improve the Efficiency of Perovskite Solar Cells

Ayesha Bashir<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*</sup>, Wenxiu Que<sup>b</sup>  
<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan  
<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research,  
Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering,  
Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### **15. Hydrophobic Hole Transport Material for Perovskite Solar Cells**

Farhan Ahmed<sup>1</sup>, Bushra Khattak<sup>1</sup>, Nadia Shahzad<sup>1</sup>, M. Imran Shahzad<sup>2</sup>

<sup>1</sup>US-Pakistan Centre for Advanced Studies in Energy (USPCASE), National University of Science and Technology (NUST), Islamabad

<sup>2</sup>Nano Science & Technology Department (NS & TD), National Center for Physics (NCP), 44000-Islamabad, Pakistan

### **16. Green Synthesis of Silver-Cobalt and Silver-Nickel nanocomposites using Wathaniacoagulans and their antibacterial activity**

Nimra Noureen, Aroosa Javed, Maryum Nazar Murtaza Hasan\*

The Department of Biochemistry and Biotechnology, The Islamia University, Bahawalpur, 63100, Pakistan

### **17. Novelty of pure and mixed ratio halide based lead perovskite for remarkable emission in visible region**

Zakia Butt, Muhammad Aamir, Shahid Aziz, Javeed Akhtar\*

Material laboratory, Department of chemistry, Mirpur University of Science and Technology (MUST), Mirpur A.K.

### **18. Flower shaped Zinc Oxide Nanoparticles Using *WuthaniaCoagulans* and Their Antibacterial Activity**

Mah Rukh Altaf<sup>1</sup>, Ayesha Zafar<sup>1</sup>, Saira Rafique<sup>1</sup>, Shaheen Qasim<sup>1</sup>, Murtaza Hasan<sup>1\*</sup>

Department of Biochemistry and Biotechnology, The Islamia University, Bahawalpur, 63100, Pakistan

### **19. An Amperometric Hydrogen Sensor Based on Pt Nanoparticles Supported Multi-wall carbon nanotubes**

Muhammad Rashid, and Yong Shin Kim\*

Faculty of Fisheries & Wildlife, University of Veterinary & Animal Sciences, Lahore

Department of Applied Chemistry, Hanyang University, South Korea

### **20. Dye-doped Graphene Treated TiO<sub>2</sub> Nanotubes for Efficient Solar Water Splitting**

Areesha Hameed<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*,</sup>, Wenxiu Que<sup>b</sup>

<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan

<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### **21. Synthesis of S-Doped TiO<sub>2</sub> Nanotubes to Improve the Performance of Perovskite Solar Cells**

Mehvish Sarfraz<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*,</sup>, Wenxiu Que<sup>b</sup>

<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan

<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### **22. TiO<sub>2</sub> Nanotubes Functionalized with Ag Nanoparticles as Electron Transporting Layer for Efficient Perovskite Solar Cells**

Sidra Mushtaq<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*,</sup>, Wenxiu Que<sup>b</sup>

<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan

<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### **23. A New Insight into Solar Paint Concept: Development of Highly Catalytic CuS/PbS Nanocomposites as Efficient Counter Electrodes for QDSCs**

Mohsin Muhyuddin<sup>1\*</sup>, Talha Farooq Khan<sup>1</sup>, and Muhammad Abdul Basit<sup>1</sup>

<sup>1</sup>Department of Materials Science and Engineering, Institute of Space Technology (IST), Islamabad.

### **24. Rapid Solidification and Laser Surfaces Alloying To Generate Thin Metastable Surfaces**

Shazeen Akhtar\*, Naveed Akhtar, Anjum Tauqir

Materials Science and Engineering Department Institute of Space Technology, Islamabad

### **25. Synthesis of NiO<sub>2</sub> Nanoparticles for use in Solar Water Splitting**

Jahan Zaib<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a, b, \*,</sup>, Wenxiu Que<sup>b</sup>

<sup>a</sup>Department of Physics, University of Agriculture Faisalabad 38000, Pakistan

<sup>b</sup>Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China

### **26. Structural, optical, dielectric and magnetic properties of PVP coated Magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles**

Syed Afzal

### **27. Synthesis And Characterization Of Copper Oxide Nanoparticles And Its Applications For Anticancer Activity By Green Route**

Abdul Rehman

**28. Synthesis of zinc based nanomaterials for electromagnetic wave absorption**

Bushra Shaukat, Syed Wilayat Husain, Muhammad Farooq Zafar

*Department of Materials Science & Engineering, Institute of Space Technology, Islamabad.*

*Centre of Excellence in Science & Applied Technologies (CESAT)*

**29. Template Control Synthesis of Manganese Oxides Nanomaterial and Their Electrochemical Profiling**

Muhammad Danish, DrAtaf Ali Altaf, Muhammad Tayyab

**30. Synthesis of Cs-Incorporated NiO<sub>2</sub> Nanoparticles to Enhance the Performance of Perovskite Solar Cells**

Anamulhaq<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a,b</sup>, Wenxiu Que<sup>b</sup>, Sidra Mushtaq<sup>a</sup>, Muhammad Irfan Ahmad<sup>a</sup>

<sup>a</sup>*Department of Physics, University of Agriculture Faisalabad 38000, Pakistan*

<sup>b</sup>*Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China*

**31. Advanced Graphene Nanomembranes Approaches to Highly Efficient Solar Thermal Generation of Clean Water**

Bilal Hassan<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a,b</sup>, Wenxiu Que<sup>b</sup>, Asif Mahmood<sup>a</sup>, Noor ul Huda<sup>a</sup>

<sup>a</sup>*Department of Physics, University of Agriculture Faisalabad 38000, Pakistan*

<sup>b</sup>*Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China*

**32. Synthesis of Graphene-doped Ag Nanoparticles to Enhance the Performance of Perovskite Solar Cells**

Muhammad Irfan Ahmad<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a,b</sup>, Wenxiu Que<sup>b</sup>, Sidra Mushtaq<sup>a</sup>, Anamulhaq<sup>a</sup>, Asif Mahmood<sup>a</sup>

<sup>a</sup>*Department of Physics, University of Agriculture Faisalabad 38000, Pakistan*

<sup>b</sup>*Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China*

**33. Enhanced Performance of Dye-Sensitized Solar Cells Benefited from TiO<sub>2</sub> Nanotubes Modified by Plasmonic Nanoparticles**

Muhammad Mateen Raza<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a,b</sup>, Wenxiu Que<sup>b</sup>, Mehvish Sarfraz<sup>a</sup>, Muhammad Shawwal<sup>a</sup>

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<sup>b</sup>*Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic & Information Engineering, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, People's Republic of China*

**34. Investigations on the Graphene/TiO<sub>2</sub> Nanocomposite to Improve the Performance of Perovskite Solar Cells**

Muhammad Shawwal<sup>a</sup>, Hafiz Muhammad Asif Javed<sup>a,b</sup>, Wenxiu Que<sup>b</sup>, Mehvish Sarfraz<sup>a</sup>, Muhammad Mateen Raza<sup>a</sup>

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**35. Hydrogen treated TiO<sub>2</sub> nanoparticles for efficient solar water splitting**

Noor ul Huda Kha, Hafiz M. Asif Javed

*BUIITEM, Quetta*

**36. Electrical characterization of Cu<sub>2</sub>O/ZnO thin film diodes**

F.Qayyum<sup>1</sup>, S.Hussain<sup>1</sup>, Z.Farooq<sup>1</sup>, K.Mehmood<sup>2</sup>, A.Ali<sup>2</sup>, M-I Arshad<sup>2</sup>, U.Younis<sup>3</sup>

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*2. Department of Physics, Government college University Faisalabad*

*3. College of Engineering Peking University Beijing China.*

**37. Laser ablation propulsion of multilayered solid target**

Rahila Shaheen and Yasir Jamil

*University of Agriculture, Department of Physics*

**38. Synthesis of Yb substitute Mg spinel ferrite by sol gel method**

<sup>1</sup>Hameed Ullah, <sup>1</sup>Tanveer Hussain Bokhari, <sup>2</sup>Naem Ashiq

<sup>1</sup>*Department of Chemistry, Government College University, Faisalabad, Pakistan*

<sup>2</sup>*Department of Chemistry, Bahauddin Zakariya University, Multan, Pakistan*

**39. Synthesis of Magnesium Oxide (MgO) - Cobalt Oxide (CoO) hybrid nanostructures and their characterization**

Farah Saeed<sup>1</sup>, Yasir Javed<sup>1\*</sup>, Naveed Akhtar Shad<sup>2</sup>, Nasir Amin<sup>2</sup>, Khuram Ali<sup>1</sup>, Hafeez Anwar<sup>1</sup>, Ayesha Younus<sup>1</sup>

<sup>1</sup>*Department of Physics, University of Agriculture, Faisalabad*

<sup>2</sup>*Department of Physics, Government College University, Faisalabad*

**40. Optimization of upper limit size hematite nanoparticles along with investigation of their biochemical and histopathological alterations in albino rats**



Kanwal Akhtar<sup>1</sup>, Nida Muzammil<sup>1</sup>, Yasir Javed<sup>1\*</sup>, Bushra Akhtar<sup>2</sup>, Faqir Muhammad<sup>2</sup>, Yasir Jamil<sup>1</sup>

<sup>1</sup>Department of Physics, University of Agriculture, Faisalabad

<sup>2</sup>Institute of Pharmacy, Physiology and Pharmacology, University of Agriculture, Faisalabad

**41. Full Bridge LLC Resonant DC-DC Converter With Duo-Cascaded Voltage Doubler Circuit For PV Power System**

Muhammad Umer Farooq and Shahid Iqbal

Electrical Department in University of Gujrat

**42. Rapid Solidification and Laser Surfaces Alloying To Generate Thin Metastable Surfaces**

Shazeen Akhtar\*, Naveed Akhtar, Anjum Tauqir

Materials Science and Engineering Department Institute of Space Technology, Islamabad

**43. Electronic and Optical properties of Co doped CdS by Density Functional Theory (DFT) Applications**

Umer Younis, Umair Shahid, Hina Ambreen, Muhammad Yaseen, Abdul Ghaffar

Department of Physics, University of Agriculture, Faisalabad 38040, Pakistan

**44. Synthesis and Characterization of BaTiO<sub>3</sub> Nanoparticles for Capacitor Applications**

Muhammad Yaseen, Sania Zahid, Hina Ambreen, Anam, Umair Shahid

Department of Physics, University of Agriculture, Faisalabad 38040, Pakistan

**45. Investigation of Ni doped PbTiO<sub>3</sub> Nanoparticles for Memory Devices Applications**

Muhammad Yaseen, Rabia Noha, Umair Shahid

Department of Physics, University of Agriculture, Faisalabad 38040, Pakistan

**46. Electronic and Optical properties of BiFeO<sub>3</sub> by first Principle Method**

Ayesha Munir, Amna Shoukat, Umair Shahid, Muhammad Yaseen

Department of Physics, University of Agriculture, Faisalabad 38040, Pakistan

**47. Inverted CH<sub>3</sub>NH<sub>3</sub>PbBr<sub>3</sub> Perovskite Solar Cell with Outstanding Open Circuit Voltage 1.17 V: Antisolvent Assisted Crystallization Synthesis**

Zumaira Siddique, <sup>\*1,2</sup> Julia L. Payne, <sup>3</sup> [Lethy K. Jagadamma](#), <sup>4</sup> [Ifor D. W. Samuel](#), <sup>4</sup> John TS Irvine, <sup>3</sup> Zareen Akhtar, <sup>1</sup> Saima Shabir, <sup>4</sup> Azhar Iqbal<sup>\*1</sup>

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<sup>5</sup>Department of Materials Science and Engineering, Institute of Space Technology, Islamabad, 44000, Pakistan

**48. Sonochemical synthesis and characterization of active zeolites from coal fly ash waste**

TABASSUM HUSSAIN<sup>a</sup>, SHAHZAD ALI SHAHID<sup>\*b</sup>, ABDULLAH IJAZ HUSSAIN<sup>b</sup>, ADNAN ALI<sup>c</sup>

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<sup>b</sup>-Department of Chemistry, GCUF, Pakistan.

<sup>c</sup>-Department of Physics, GCUF, Pakistan.

**49. Improvement in de-bonding strength using CNT in Nomax Honeycomb core and carbon fiber sandwich composite**

Muslim Al-Mahmood

Material Science & Engineering Institute of Space Technology (IST), Islamabad

**52. Semiconductors Thin Films under Vacuum for Photo Voltaic Applications**

Nazar Abbas Shah<sup>1\*</sup>, Murrawat Abbas<sup>2</sup>

<sup>\*1</sup>Thin Films Technology Research Lab, Department of Physics, COMSATS University, Islamabad 45320 Pakistan

<sup>2</sup> Department of Physics, Riphah International University Islamabad

**50. Effect of Magnesium on Structural and Optical Properties of CaTiO<sub>3</sub>: A DFT Study**

Dr. Muhammad Rizwan<sup>1</sup>; Dr. Zahid Usman<sup>2</sup>

1. Department of Physics, University of Gujrat

2. Department of Physics, University of Education

**51. Fabrication of 3D nanohybrid comprising bismuth nanosheets with molecularly imprinted polymers for the mass-sensitive detection of chloramphenicol**

Ayesha Shaheen<sup>a,b</sup>, Aanam Munawar<sup>a,b</sup>, Ayesha Taj<sup>a,b</sup>, Peter A. Lieberzeit<sup>c</sup>, Thomas J. Webster<sup>d</sup>, Aiguo Wu<sup>e</sup>, Waheed S. Khan<sup>a\*\*</sup>, and Sadia Z. Bajwa<sup>a\*</sup>

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<sup>e</sup>Nanobiomaterials Group, Ningbo Institute of Materials Technology and Engineering (NIMTE), Chinese Academy of Sciences (CAS), Ningbo City, Zhejiang, China

**52. Synthesis of Yb substitute Mg spinel ferrite by sol gel method**

<sup>1</sup>Hameed Ullah, <sup>1</sup>Tanveer Hussain Bokhari, <sup>2</sup>Naeem Ashiq

<sup>1</sup>Department of Chemistry, Government College University, Faisalabad, Pakistan

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**53. Stainless steel (SS) 314 and 316 foams as catalysts for bleed air contamination**

Sadaf Aftab, John T.S. Irvine and Aida Fuente Cuesta<sup>3</sup>

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**54. High yield synthesis of pure ZnO nanoparticles by one step solid state reaction approach for optical and peroxidase-like activities**

Naveed Akhtar Shad<sup>1</sup>, Muhammad Munir Sajid<sup>1</sup>, Yasir Javed<sup>2\*</sup>, Syed Zajif Hussain<sup>3</sup>, Nasir Amin<sup>1\*</sup>

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<sup>3</sup>*Department of Chemistry, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences (LUMS), DHA, Lahore Cantt—54792, Lahore, Pakistan*

**55. Facile Synthesis of Bismuth Tungstate (Bi<sub>2</sub>WO<sub>6</sub>) sheet-like Nanostructures for Efficient Photocatalytic Degradation of Coomassie Brilliant Blue (CBB)**

Naveed Akhtar Shad<sup>1</sup>, Muhammad Munir Sajid<sup>1</sup>, Yasir Javed<sup>2\*</sup>, Syed Zajif Hussain<sup>3</sup>, Nasir Amin<sup>1\*</sup>

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<sup>3</sup>*Department of Chemistry, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences (LUMS), DHA, Lahore Cantt—54792, Lahore, Pakistan*

**56. Synthesis and Characterization of Nickel Tungstate (NiWO<sub>4</sub>) Nanoparticles for Optical and Photocatalytic applications**

Naveed Akhtar Shad<sup>1</sup>, Muhammad Munir Sajid<sup>1</sup>, Yasir Javed<sup>2\*</sup>, Syed Zajif Hussain<sup>3</sup>, Nasir Amin<sup>1\*</sup>

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<sup>3</sup>*Department of Chemistry, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences (LUMS), DHA, Lahore Cantt—54792, Lahore, Pakistan*

**57. Detection of toxic elements present in powder cosmetics by Spectroscopic techniques**

Shaheen Afzal<sup>1</sup>, Nasba Nazir<sup>1</sup>, Yasir Jamil<sup>1</sup>, Khurum Ali<sup>1</sup> and Ayesha Younus<sup>1\*</sup>

<sup>1</sup>*Laser matter interaction and Nanosciences Lab., Department of Physics, University of Agriculture, Faisalabad (38040) Pakistan*

**58. Eco friendly ZnO Nanoparticles coated cotton fabrics having enhanced UV and Antibacterial Properties**

Ayesha Younus<sup>1\*</sup>, Attia Shaheen<sup>1</sup>, Misha Khalid<sup>1</sup>, Yasir Javed<sup>1</sup>, Shagufta Riaz<sup>2</sup> and Muhammad Mubin<sup>3</sup>

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<sup>3</sup>*Virology lab, Center of Agricultural Biochemistry and Biotechnology, University of Agriculture, Faisalabad (38040) Pakistan*

\*Corresponding author E-mail: ayesha.younus@uaf.edu.pk

**59. Comparative pharmacokinetic analysis of kanamycin loaded PLGA Nanoparticles in Transdermal and Oral Formulations**

Aamina Shahzadi, Nimra Tariq, Faqir Muhammad\*, Bushra Akhtar

*Institute of Pharmacy, Physiology and Pharmacology, University of Agriculture, Faisalabad*

**60. First Principles Study of Electronic and Optical Properties of Mg-Doped SrTiO<sub>3</sub>**

A. Maida; Rizwan. M

*Department of Physics, University of Gujrat*

*Department of Biochemistry & Biotechnology, The Islamia University of Bahawalpur.*

**61. Flower shaped Zinc Oxide Nanoparticles Using *Withania Coagulans* and Their Antibacterial Activity**

Mah Rukh Altaf<sup>1</sup>, Ayesha Zafar<sup>1</sup>, Saira Rafique<sup>1</sup>, Shaheen Qasim<sup>1</sup>, Murtaza Hasan<sup>1\*</sup>

*Department of Biochemistry and Biotechnology, The Islamia University, Bahawalpur, 63100, Pakistan*

**62. Comparative Study of Biologically and Chemically Prepared Magnetic Iron Oxide Nanoparticles**

Syra Rafique, Shaheen Qasim, Rida Khan, Murtaza Hasan\*

*Department of Biochemistry and Biotechnology, The Islamia University Bahawalpur, Pakistan.*

**63. Synthesis and Characterization of Cu<sup>2+</sup> ion substituted Cu<sub>x</sub>Ni<sub>1-x</sub>Fe<sub>2</sub>O<sub>4</sub> nanoparticles by sol-gel auto-combustion Method**

Muhammad Khalid, Zaheer Abbas Gilani, Izat Ullah, H.M. Noor ul Huda Khan Asghar

*Department of Physics, Balochistan University of Information Technology, Engineering & Management Sciences, Quetta 87300, Pakistan*

**64. A comparative study of Nickel thin films of nanoscale thickness, grown at different substrate temperatures**

Sabiha Jamal Khurshid

*Lahore Garrison University, Lahore*

**65. Fast surface charge transfer with reduced band gap energy of FeVO<sub>4</sub>/Graphene nanocomposite and study of its electrochemical property and enhanced photocatalytic activity**

Muhammad Munir Sajid<sup>a,c</sup>, Naveed Akhtar Shad<sup>a,b</sup>, Sadaf Bashir Khan<sup>c</sup>, Zhengjun Zhang<sup>d\*</sup>, Nasir Amin<sup>a\*</sup>

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**66. Deposition of ZnO/Ag/ZnO films by thermal evaporator**

Nazish, B Hassan, I A Shah, S A Hussain, S Pervez, N Kanwal, I A Khan  
*Department of Physics, Thin Film Deposition Lab, GC University, Faisalabad*

**67. Effect of Bismuth Substitution on Magnetization of Ferrites**

, Muhammad Shahzad Shifa<sup>1</sup>, Amina Saleem<sup>1</sup> Zaheer Abbas Gillani<sup>2</sup>, M. Imran Khan<sup>1</sup>

<sup>1</sup>Nano-ferrites synthesis and Texture Analysis Lab, Department of Physics, Government College University Faisalabad,

<sup>2</sup>Department of Physics, Balochistan University of Information Technology, Engineering and Management Sciences, Quetta<sup>2</sup>

**68. A comparison of structural and magnetic properties between praseodymium substituted LiCo ferrite and LiNi ferrite.**

Muhammad Shahzad Shifa<sup>1</sup>, Amina Saleem<sup>1</sup>, Khalid Mahmood<sup>1</sup>, Adnan Ali<sup>1</sup>, Zaheer Abbas Gilani<sup>2</sup>, H. M. Noor Ul Huda Khan<sup>2</sup>

<sup>1</sup>Department of Physics, Government College University Faisalabad,

<sup>2</sup>Balochistan University of Information Technology, Engineering and Management Sciences<sup>2</sup>

**69. XRD and Raman studies of Mg-substituted Cd-Cu nano ferrites synthesized via sol gel auto combustion method**

S. Arshad<sup>a</sup>, M Ajaz-un-Nabi<sup>a</sup>, N. Amin<sup>a</sup>. M Imran Arshad<sup>a</sup>, K Mahmood<sup>a</sup>, A. Ali<sup>a</sup>, M Sharif<sup>a</sup>

<sup>a</sup>Department of Physics, Government College University, Faisalabad, Pakistan

**70. Synthesis and Characterization of Cu-substituted Co-Cd nano ferrites synthesized via sol gel auto combustion method**

A. Akram<sup>a</sup>, M Ajaz-un-Nabi<sup>a</sup>, M Imran Arshad<sup>a</sup>, N. Amin<sup>a</sup>. M Sharif<sup>a</sup>, K Mahmood<sup>a</sup>, A. Ali<sup>a</sup>

<sup>a</sup>Department of Physics, Government College University, Faisalabad, Pakistan

**71. Computational study of Cd<sub>n</sub>Te<sub>n</sub> Quantum Dots**

Muhammad Jawwad Saif, Muhammad Imran

*Department of Applied Chemistry, Government College University Faisalabad*

**72. Adsorption-based-filtration: An approach to remove inorganic pollutants from water**

Muhammad Muqteet, Rasool Bux Mahar, Zeeshan Khatri

U.S.-Pakistan Center for Advanced Studies in Water, Mehran University of Engineering and Technology, Jamshoro

**73. Synthesis of Modified CuZn ferrites for degradation of dyes from industrial wastewater**

Miss Ramiza I\*, Atsha Ambar<sup>1</sup>, Huma Sadiq<sup>1</sup>, Dr. Abdul Malik<sup>2</sup>, Dr. Yasir Javed<sup>2</sup>, Dr. Tasleem Mustafa<sup>2</sup> Affiliation: University of Agriculture Faisalabad

**74. The Rising of Nanotechnology in Oil and Gas Exploration & Production**

\*Engr. Babar Saeed, 2Dr. Engr. Muhammad Ahmad, 3Engr. Muddasar Safdar, Engr. 4Syed Ejaz Haider, 5Engr. Bilal Akbar \*Lead Presenter 1 Email:babarsaeed@gcuf.edu.pk, Chemical Engineering Techlogy Department, GC University Faisalabad ,Chemical Engineering Technology Department, GC University Faisalabad

75. Mohsin Muhhudin, TBA

76. Tayyub Ahsan, TBA

**77. Integrated interleaved boost resonant DC-DC coverter with voltage quadrupler rectifier for PV power system**

Eng. Asif Rehman

University of Gujrat

**78. variation of Optical dielectric andmagnetic properties of Cobalt doped Maghemite nanoparticles**

M. Hussain Khan

Abdul Wali Khan, Mardan

**79. Morphological and physical properties of**

Khadim Hussain, Faisalabad

**80. Synthesis of Graphenized-Plasmonic Nanocomposite for Highly-EfficientSolar Water Purification System**

Asif Mahmood

University of Agriculuture Faisalabad

**81. Investigation and comparison of Structural, Optical, dielectric and magnetic properties of SnO<sub>2</sub> Nano rods and Nano sphares**

Naveed Hussain

Abdul Wali Khan University, Mardan

**82. Synthesis and Characterization of Cadmium Oxide Nanoparticles**

Hina Iqbal

Department of Physics, University of Sargodha

**83. Study of Structural, Optical and Electrical properties of Cu<sup>2+</sup>dopedZn<sub>0.4</sub>Co<sub>0.6-x</sub>Ce<sub>0.1</sub>Fe<sub>1.9</sub>O<sub>4</sub> Spinel Ferrites prepared by Co-precipitation Method**

Khalid Hussain

Department of Physics, Government College University Faisalabad

**84. In-Vitro In-Vivo Behavior of Fotolon coupled Zn/ZnO Nanospheres Based Photodynamic Therapy Under UV-Visible Exposure**

Seemab Iqbal 1\*, Muhammad Fakhar-e-Alam 1,2 1Department of Physics, Government College University, Faisalabad 38000, Pakistan; seemabiqbal11@hotmail.com (S.I.) 2 Key Laboratory of Magnetic Materials and Devices & Division of Functional Materials and Nanodevices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China

**85. Catalyst free synthesis of  $\text{SnO}_2$  microplates**

Nida Riaz University of education Faisalabad campus

**86. Band Gap modulation effect on the electronic and optical properties in  $\text{PbTiO}_3$  under stress: A DFT study**

B. Rabia; Rizwan. M

Department of Physics, University of Gujrat

**87. First Principles Study of Electronic and Optical Properties of Cu-Doped  $\text{LaAlO}_3$**

G. Samina; Rizwan. M

Department of Physics, University of Gujrat

**88. Effect of La- and Mg- codoping on structural, electronic and optical properties of  $\text{CaTiO}_3$ : A DFT Study**

Sheraz Ahmad; Muhammad Rizwan

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