

PAKISTAN ADVANCED MATERIALS FORUM

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INAUGURAL CEREMONY

**National Centre for Physics, Islamabad
Main Auditorium**

Monday, 02nd October 2023

0920	Guests to be seated
0930	Arrival of the Chief Guest
0935	Recitation from the Holy Quran
0940	Introductory Note by the General Secretary PAMF
0950	Welcome Address by the President PAMF
1000	Inaugural Address by the Chief Guest
1010	Industrial Exhibition Round
	Refreshments

Technical Program

Session - 01 (MAIN AUDITORIUM)

Monday, October 02, 2023, Time 11:00-12:40

Chairperson: Michael Sorokin and Fazal Ahmad Khalid

11:00	23-N1	KN	Quest For Better Materials for High Temperature Applications <i>Dr. Anjum Tauqir, Pakistan</i>
11:40	23-161	KN	Prospects of REFeB/Alnico Nanocomposite Magnets as Next Generation Permanent Magnetic Materials <i>Sajjad Ur Rehman, China</i>
12:20	23-198		TK Diagrams to Determine the Impact of pH Variation on 3D Printed CoCr Alloy Implant Corrosion <i>W. Haider, USA</i>
12:40-14:00			Lunch and Prayer Break

Session - 02 (MAIN AUDITORIUM)

Monday, October 02, 2023, Time 14:00-15:40

Chairperson: Anjum Tauqir and Iftikhar Us Salam

14:00	23-185	KN	Formation of Radiation Damages in Wide-Gap Dielectrics: What Can We Learn from Lithium Fluoride Irradiation <i>Michael Sorokin, Russia</i>
14:40	23-25		Thermoelectric Properties of ZnO-Al Nano-Composites <i>Bushra Waheed, A. Maqsood, M. S. Awan, M. A. U. Rehman, Pakistan</i>
15:00	23-184		Improving Automobile Thermal Management with Nanofluids for Enhanced Heat Transfer Efficiency <i>Altamash Shabbir, H. A. Hamza, Pakistan</i>

15:20 23-26 The Influence of Nano-Particle Shape and
Size on Advance Material Properties
*Naveed Hassan, M. Mumtaz, N. Akhter, G. Raza,
Pakistan*

15:40-16:00 Tea Break

Session - 03 (LOBBY)

Monday, October 02, 2023, Time 16:00-17:25

Exhibition

(Open for All Participants during 2-6 October 2023)

Session - 05 (Room No. 108)

Tuesday, October 02, 2023, Time 14:00-15:40

Chairperson: Abdul Khaliq and Syed Khalid Shah

14:00	23-10	KN	Development of Novel and Smart Hybrid Materials from Industrial Ceramic Waste for Capacitor Applications <i>Mohammad Sohail, M. Omer, Pakistan</i>
14:40	23-143		In Search of a Cracking Catalyst: Aluminum and Surfactant Modified ZSM-5 Zeolites <i>Muhammad Rashid Usman, A. Ramzan, Pakistan</i>
15:00	23-12		A Comparative Study on the Joint Hardness of Dissimilar Aluminium Alloy Welds Using Tungsten Inert Gas (TIG) Welding <i>J. Jadoon, A. Shahzad, Z. Abdullah, A. Shakoor, Pakistan</i>
15:20	23-60		Characterization and Fitting for Divalent Ni ⁺² Substituted V-Type (Sr _{1-x} Ni _x Fe ₈ SnO ₁₅) Hexagonal Ferrite <i>Rida, Pakistan</i>
15:40-16:00			Tea Break

Session - 06 (MAIN AUDITORIUM)

Tuesday, October 03, 2023, Time 09:00-10:40

Chairperson: Waseem Haider and Muhammad Shoib

9:00	23-190	KN	Intrinsically Conducting Polymers (ICPs): a Promising Materials Class with Many Striking Applications <i>Asif Ali Qaiser, A. Ali, Pakistan</i>
9:40	23-N4	KN	Recycling of Polymer Based Materials for Sustainable Materials Production, R&D Opportunities and Challenges <i>S. M. Khan, N. Gull, S. Zia, S. Saleemi, Pakistan</i>

10:20	23-50	Processing of Reduced Graphene Oxide Reinforced Ultra High Molecular Weight Polyethylene for Orthopedic Implants <i>Farhan, Pakistan</i>
10:40-11:00		Tea Break

Session - 07 (MAIN AUDITORIUM)

Tuesday, October 03, 2023, Time 11:00-12:40

Chairperson: Asif Ali Qaiser and Muhammad Zubair

11:00	23-147	KN	Incorporation of Machine Learning in Additive Manufacturing <i>W. Haider, A. Raza, USA</i>
11:40	23-7	KN	3D Printing Assisted Fabrication of Copper-Silver Mesoporous Bioactive Glass Nanoparticles Reinforced Sodium Alginate/Polyvinyl Alcohol Based Composite Scaffolds: Designed for Skin Tissue Engineering <i>Muhammad Attiq Ur Rehman, Pakistan</i>
12:20	23-47		Effect of the Interfacial Region on the Mechanical Properties of Ti6Al4V Alloy Manufactured by SLM Technology <i>A. Hadi, F. Ali, A. A. Khurram, Z. Asghar, Pakistan</i>
12:40-14:00			Lunch and Prayer Break

Session - 08 (MAIN AUDITORIUM)

Tuesday, October 03, 2023, Time 14:00-15:40

Chairperson: M. Attiq Ur Rehman and Aamir Nusair

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|-------------|--------|----|--|
| 14:00 | 23-32 | KN | Functional Properties of NBT-BMN Lead-Free Electro-ceramics
<i>Fayaz Hussain, Pakistan</i> |
| 14:40 | 23-81 | | Polypyrrole Coated Carbon Fiber/ Magnetite/ Graphene Oxide Reinforced Hybrid Epoxy Composites for Aerospace and Electromagnetic Interference Shielding Applications
<i>R. Kanwal , M. F. Maqsood , M. A. Raza, M. Waris, Z. U. Rehman, S. Ali, M. F. Khan, Pakistan</i> |
| 15:00 | 23-124 | | Numerical Calculations in Solid-Carbon/Liquid Copper Composite Heat Transfer Model.
<i>Attrra, Pakistan</i> |
| 15:20 | 23-123 | | Design and Development of Ultra-High Thermal Conductivity Polymer Matrix Composites with Segregated-Filler Network
<i>H. K. R. Chishti, W. Amin, S. S. Akhtar, M. A. Hussain, M. A. Raza, A. Inam, T. Ahmad, A. Abu-Bakr, A. F. M. Arif, Pakistan</i> |
| 15:40-16:00 | | | Tea Break |

Session - 09 (GALLERY)

Tuesday, October 03, 2023, Time 16:00-17:15

Poster Session-I

Chairperson: Poster Judges

- 23-09 The Amelioration of the Octane Number of the Gasoline in the Petroleum Refinery of Arzew, Algeria
Menouar Hanafi, Algeria
- 23-14 Synthesis and Characterization of Lanthanum Cerate (La₂Ce₂O₇)
F. Khurram, Q. Shehzad, H. Sheikh , Pakistan
- 23-22 Effect of Polyamide (PA12) Volume Fraction on Properties of NdFeB Bonded Magnets
M. Noreen, A. N. Khan, A. Ali, S. Imran, O. F. Azam , Pakistan
- 23-23 Synthesis and Characterization of Ultralight and Flexible Thermoelectric Aerogel Based on Conducting PEDOT: PSS Polymer for Temperature and Pressure Sensing Applications
Sadia, Pakistan
- 23-27 Material Characterization of 3-D Printed Polylactic Acid-Based Polymer Matrix Composites
Z. Abidin, M. H. Anwar, A. A. Khan , Pakistan
- 23-30 Variations in Process Parameters and Their Effect on Electrical Properties of ZnO-Based Varistors
M. Hassan, A. Nigah, M. Hussain, Pakistan
- 23-35 Erosion-Corrosion Failure Analysis of the Elbow Pipe of Rice Conditioning Plant
M. R. Khan, Y. Eisa, M. Nadeem, S. M. Mahad, M. Bilal, S. M. B. Khalid, Pakistan

- 23-37 Improved Ionic Conduction Behavior of Sm-Pr Co-Doped Ceria Electrolyte Materials for SOFCs
H. Z. U. Abideen, A. Maqsood, M. A. U. Rehman, Pakistan
- 23-40 Synthesis and Characterization of Carbon Dots-Coated Magnetite Nanoparticles for Potential Brain Cancer Therapy
Zahida, Pakistan
- 23-45 Development and Fabrication of Laser-Induced Graphene-Based Nanocomposites for Water-Splitting Electrodes.
A. S. Ejaz, S. Areeb, M. S. Hassan, M. A. Basit, Pakistan
- 23-48 Analysis of Conductivity of $\text{Cu}_{0.6}\text{Cr}_{0.2}\text{Fe}$ and $\text{Cr}_{1.38}\text{Cr}_{0.22}\text{Fe}_{0.6}\text{Si}_{0.2}\text{Pb}$
A. Ahmad, A. Haider, M. Nasir, A. Basit, A. Nusair, Pakistan
- 23-50 Processing of Reduced Graphene Oxide Reinforced Ultra High Molecular Weight Polyethylene for Orthopedic Implants
Farhan, Pakistan
- 23-54 Anomalous Dielectric Behavior of Sol-Gel Assisted X-Type Hexagonal Ferrites upon the Substitution of Pr^{3+} - Cu^{2+} ions
M. Idrees, I. S. Khan., Pakistan
- 23-57 Nickel Cobalt Oxide – Quantum Dot Nano Composites for Photocatalytic Water Splitting
N. Haider, R. Zafar, Osama, M. A. B. Saim, Pakistan
- 23-61 A Review of Welding Techniques for Dissimilar Alloys: Titanium-Nickel System
Q. M. Yaseen, R. M. Gul, F. N. Khan, Pakistan
- 23-62 Processing of Reduced Graphene Oxide Reinforced Ultra High Molecular Weight Polyethylene for Orthopedic Implants
Farhan, R. M. Gul, M. A. Kamran, A. Shakoor, Pakistan

- 23-65 Novel Hexagonal Boron Nitride (hBN) Nanoparticles/Ultra-High Molecular Weight Polyethylene Composite for Development of Separators in Lithium-Ion Batteries
I. Khan, Farhan, M. A. Kamran, R. M. Gul, Pakistan
- 23-68 La³⁺-Substituted β -Ferrite: Investigation of Structural, Dielectric, FTIR and Electrical Polarization Properties
S. Saeed, I. Sadiq, Pakistan
- 23-74 Raveling Out the Effect of Pr³⁺ ions Substitution on Different Properties of Nano-Sized Hexagonal Ferrites
Saba Naz Pakistan
- 23-76 Peculiar Magnetic Behavior and Structural, Electrical, Dielectric Properties of Pr Substituted R-Type Hexagonal Ferrites
Muhammad Shahbaz, Pakistan
- 23-79 Sustainable Development of Aluminum Grade 7075 Utilizing Scrap and Their Study of Physical, Mechanical and Thermal Properties
A. Rehman, M. Amjad, S. Fahim, A. Hussain, S. H. Siyal, Pakistan
- 23-80 Impact of Alloying Elements on the Microstructure, Mechanical Properties and Thermal Properties of Gray Cast Iron
A. Razaq, X. Peng, Y. Yin, T. A. Shehabeldeen, J. Zhou, China
- 23-89 Tunable Properties of Rare Earth Elements (Ce, Dy, Yb, La and Pr) Substituted R-Type Hexagonal Ferrites
Haseeb shah, Pakistan
- 23-106 Nickel Sulfide/Zinc Sulfide Hybrid Nanocomposite for Symmetric Supercapattery Device
R. Qayyum, S. Khalid, W. Mahmood, Pakistan

- 23-107 Recycling of Ceramics Processing Waste for Manufacturing Economical and Constructional Material Contributing in Sustainable Development Growth (SDG)
A. Riaz, A. Khan, S. M. Madni, M. Ahmed, Pakistan
- 23-109 Stainless Steel Matrix Composite Reinforced by Superhard in Situ TiB₂ Produced Through Casting Technique
S. Z. Abbas, T. Shehbaz, F. N. Khan, Pakistan
- 23-139 Semi-Conductive Quantum-Dots Based Electrodes for Application of Energy Devices
Noor-us-sabah, Pakistan
- 23-144 Correlation of Part Orientation During 3D-Printing and the Mechanical Properties of Stainless-Steel Alloy
M. U. Safir, A. Munir, A. A. Khurram, Pakistan
- 23-146 Green Synthesis of Iron-Manganese Oxide (FMO) Nanoparticles and Larvicidal Activity Against Dengue Mosquitoes (*Aedes Aegypti*)
A. I. Durrani, M. G. Abbas, R. Nazir, Pakistan
- 23-148 Structure and Properties of AlCrCo_(1-x)Fe_(1+x)Ni₂ High Entropy Alloy
S. Z. Abbas, R. Ali, F. A. Khalid, Pakistan
- 23-152 Effect of Rotational Speed on the Microstructural, Mechanical, and Electrochemical Behavior of the Friction Stir Welded 5083 Al-Mg Alloy
H. Ahmed, M. B. Asghar, U. Sarwar, M. H. Qureshi, A. Farooq, M. Afzal, Pakistan
- 23-155 Synthesis and Characterization of Ternary and Quaternary Mixed Oxides for CO₂ Hydrogenation to Methanol
M. Moeen, S. Rehman, M. S. Akram, M. R. Usman, Pakistan
- 23-166 Effect of Precursor Graphite on the Thermal Contact Resistance of Thermally Reduced

- Grapheme Oxide/Silicon Composite
developed for Thermal Interface Applications
M. A. A. Zubair, M. A. Raza, Pakistan
- 23-167 Liquid Metal Embrittlement of Ni-Cu Alloy
N. Zubair, N. Ejaz, M. Mansoor , Pakistan
- 23-168 Correlation of Metallurgical and Magnetic
Properties of 18Ni2400 Steel
N. Zubair, N. Ejaz, M. Mansoor , Pakistan
- 23-170 High-Performance Flexible Symmetric Super
Capacitor Based on Microwave Assisted
Synthesize Flower-Like Nickel Cobalt Oxide
*M. Saleem, S. Aneel, N. Abbas, S. K. M. Shah ,
Pakistan*
- 23-171 Unleashing the Potential of Microwave
Assisted Synthesize Nickel Sulphide, as an
Efficient Electro Catalyst for Oxygen
Evolution Reaction
*S. Aneel, M. Rabbani^b, M. Saleem, A. Ali, S. Zaman, Q.
Ahmed, S. K. M. Shah, Pakistan*
- 23-177 Microstructure Evaluation of High Strength
Bainitic Steel and Development of Heat
Treatment Process to Achieve the Mechanical
Properties Required for Flow Forming
Process
A. Muiz, M. Rauf, K. Yaseen, I. U. Salam , Pakistan
- 23-178 Aileron Failure of an Aircraft - Improved
Reassembling of Self-Aligning Bearing
N. Ejaz, M. Mansoor, Pakistan
- 23-179 Development and Characterization of Glass
Fiber Reinforced Concrete (GFRC)
*M. A. Sajid, S. A. Sajid, M. H. Javed, M. U. Manzoor,
Pakistan*
- 23-199 Effect of Different Compositions of Rare
Earth Element (Cerium) on Microstructure,
Mechanical Properties and Corrosion
Behavior of NiTi Shape Memory Alloy
I. F. Sher, S. Z. Asghar , Pakistan

23-
N16

Zeeshan, Pakistan

17:15-17:25

Ice Cream Break

Session - 10 (Room No. 108)

Tuesday, October 03, 2023, Time 09:00-10:40

Chairperson: M. Waseem Akhtar and Saif Ullah Awan

- 09:00 23-181 KN Current Research Developments in Nanomaterials for Underground Drinking Water and Industrial Wastewater Treatment.
Muhammad Yasir Khan, Pakistan
- 09:40 23-4 Recent Trends of Water Treatment with Graphene Nano-Composites in Pakistan: a Review
S. Bhutto, M. Y. Khan, N. Jalbani, Pakistan
- 10:00 23-67 Dual Ceramics (LATP - LLTO) Composed by Functional Polymer Electrolyte for Dendritic-Free and Robust Lithium Metal Batteries
S. H. Siyal, M. S. Javed, L. Lan, Pakistan
- 10:20 23-83 Ordered Double Transition Metal MAX Phases and their Etching Into MXenes-Synthesis and Electrochemical Studies
Y. Khan, H. E. Unalan, Pakistan
- 10:40-11:00 Tea Break

Session – 11 (Room No. 108)

Tuesday, October 03, 2023, Time 11:00-12:40

Chairperson: M. Yasir Khan and Hamid Zaigham

11:00	23-193	KN	Hybridization of Hexagonal Boron Nitride Nanosheets and Multilayer Graphene: Enhanced Thermal Properties of Epoxy Composites <i>M. W. Akhtar, M. W. Akhtar, Pakistan</i>
11:40	23-15		Comparative Study of Zinc Sulfide Thin Films Fabricated by Spin Coating and RF Magnetron Sputtering as a Buffer Layer for 2nd Generation Photovoltaic <i>S. S. A. Shah, N. Ali, Z. Habib, S. Taimoor, N. Mehboob, Pakistan</i>
12:00	23-90		Use Of Organic And Inorganic Phase Change Materials For The Development Of Personalized Cooling Devices <i>Farhan, M. A. Hamza, Pakistan</i>
12:20	23-116		Development of Procedure and Process Parameters for Solid Phase Joining of Aluminum Alloys. <i>M. A. N. Awan, M. U. Akram, Y. Qureshi^c, O. R. Shah, A. Ayaz, H. Zaigham, Pakistan</i>
12:40-14:00			Lunch and Prayer Break

Session - 12 (Room 108)

Tuesday, October 03, 2023, Time 14:00-15:40

Chairperson: Ali Dad Chandio and Muhammad Shoaib

14:00	23-N12	KN	An Insight into Metal Impurities Removal from Aluminum <i>A. Khaliq, Saudi Arabia</i>
14:40	23-120		Shape Memory-Based Smart Extra Ocular Muscles for Ophthalmological Studies <i>Z. Ali, J. Z. Gul, Pakistan</i>

15:00	23-N14	Current Research Developments in Nanomaterials for Underground Drinking Water and Industrial Wastewater Treatment <i>M. Y. Khan, Pakistan</i>
15:20	23-40	Synthesis and Characterization of Carbon Dots-Coated Magnetite Nanoparticles for Potential Brain Cancer Therapy <i>Zahida, Pakisatn</i>
15:40-16:00		Tea Break

Session - 13 (MAIN AUDITORIUM)

Wednesday, October 04, 2023, Time 09:00-10:40

Chairperson: Sajjad Ur Rehman and Sajjad Ahmad

9:00	23-187	KN	Review Effects of Electron and Neutron Irradiation on Large Band Gap Materials and Quantum Dot Devices: Characterization and Performance Analysis <i>Nurul Fadzlina Hasbullah, Malaysia</i>
9:40	23-55		Deformation at the Microscopic Scale in Laves Phase Reinforced Mg-Al-Ca Alloys <i>M. Zubair, S. Sandlöbes-haut, S. Korte-kerzel, Pakistan</i>
10:00	23-151		Water Uptake Analysis in the Epoxy Coating Through Electrochemical Impedance Spectroscopy <i>A. Farooq, M. H. Qureshi, R. Ahmad, Pakistan</i>
10:20	23-56		Substantial Cost Reductions and Energy Savings by Optimizing Heat Treatment Cycle of Cylinder Heads Made from Al-Si-Cu Alloy <i>M. A. Rafiq, M. A. Aslam, M. Zubair, M. A. Hussain, M. S. Habib, Pakistan</i>
10:40-11:00			Tea Break

Session - 14 (MAIN AUDITORIUM)

Wednesday, October 04, 2023, Time 11:00-12:40

Chairperson: Nurul Fadzlin Hasbullah and Shabbar Abbas Rizvi

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|-------------|--------|----|--|
| 11:00 | 23-20 | KN | Recycling of Metals: a Step Forward Toward Sustainable Society, Global Perspective and Metallurgical Challenges
<i>S. Akhtar, Norway</i> |
| 11:40 | 23-164 | | Influence of Submicron Metal Powder on the Grain Boundary Diffusion and Magnetic Properties of Nd-Fe-B Sintered Magnets
<i>Sajjad Ur Rehman, China</i> |
| 12:00 | 23-N9 | | Hydrothermally Synthesis of Morphotropic Phase Boundary Composition of Bismuth-Based Piezoceramics
<i>Adnan Maqbool, Mahnoor Nawaz, Zahoor Ahmed, Ali Ahmad Khan, Muhammad Salman Habib, Muhammad Asif Rafiq, Muhammad Asif Hussain, Irrnan Hussain Khan, Muhammad Zubair, Ehsan Ul Haq, Pakistan</i> |
| 12:20 | 23-138 | | Development of Fly and Bottom Ash Based Geopolymer Composites Construction Materials
<i>M. A. Hussain, E. U. Haq, H. K. R. Chishti, W. Amin, M. A. Raza, A. Inam, T. Ahmad, A. Maqbool, Pakistan</i> |
| 12:40-14:00 | | | Lunch and Prayer Break |

Session - 15 (LOBBY)

Wednesday, October 04, 2023, Time 14:00-15:40

Poster Competition: Innovations in Surface Engineering

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|-------|---|
| 23-15 | Comparative Study of Zinc Sulfide Thin Films Fabricated by Spin Coating and RF Magnetron Sputtering as a Buffer Layer for 2nd Generation Photovoltaic
<i>S. S. A. Shah, N. Ali, Z. Habib, S. Taimoor, N. Mehboob, Pakistan</i> |
| 23-36 | Fabrication of Copper Composite Coatings through Cold Spraying Process |

- A. Ali, F. Z. Khan, M. Yasir, Pakistan*
- 23-46 Development and Characterization of Metal Oxide Based Coatings for Camouflage Applications
Ansa Khan, Pakistan
- 23-49 Electrophoretic Deposition of Titania/ Cu Doped Mesoporous Bioactive Glass Nanoparticels Layer on PEEK for Biomedical Application
A. Imran, K. Ahmad, Pakistan
- 23-52 Electrophoretic Deposition, Microstructure and Selected Properties of Zein/ Cloves Coatings on 316L Stainless Steel
K. Ahmad, M. A. U. Rehman, Pakistan
- 23-53 A Comparative Study/Analysis of Elemental Ni, Binary Ni-P, and Ternary Ni-W-P Alloy Coatings: Preparation and Characterization
K. Shahzad, H. Kousar, A. Raza, M. Uzma, N. Baig, A. Umar, A. Shakoor, Pakistan
- 23-63 Surface Properties of UHMWPE: Evaluating Hardness, Elastic Modulus, and P-H Curve Using Nano-Indentation
M. J. Shah, A. Nawaz, M. A. Kamran, F. N. Khan, R. M. Gul, Pakistan
- 23-64 Development of Bi-Directional Pin-On-Disc Wear Testing Machine for UHMWPE Used in Total Joint Replacements
W. Waheed, A. H. Khan, M. A. Kamran, R. M. Gul, A. Shakoor, Pakistan
- 23-70 WC-Co Composite Coatings for Industrial Applications Via Cold Spraying
M. Yasir, M. T. Farooq, M. S. Iqbal, S. M. Khan, Pakistan
- 23-78 Study and Fabrications of Aluminum Based Composite Coatings.
M. A. Asmaeel, N. Sultan, M. Yasir, Pakistan

23-99	Corrosion and Wear Characteristics of Cerium Doped Beryllium Free Ni-Cr-Mo Dental Casting Alloy <i>A. Haider, S. H. I. Jaffery, A. N. Khan, X. Jing, Pakistan</i>
23-140	Characterization of Surface Oxides on SS 321 Sheet by Grazing Incident X-Ray Diffraction <i>W. Hasan, Z. Abdullah, W. Muhammad, N. Zubair, Pakistan</i>
23-142	Thermal Barrier Characteristics of Lanthanum Cerate Synthesized by Thermo-Mechanical Process <i>N. Zubair, N. Ejaz, M. Mansoor, Z. Abdullah, Pakistan</i>
15:40-16:00	Tea Break

19:00 Symposium Dinner

Session - 16 (Room No. 108)

Wednesday, October 04, 2023, Time 09:00-10:40

Chairperson: Shaikh Mohiuddin and Shahid Nisar

09:00	23-08	KN	Electrospun Interconnected Micro-Nano Fibrous Materials for Moisture Management Textiles <i>A. A. Babar, X. Wang, B. Ding, China</i>
09:40	23-101	KN	Development of Edible Packaging Films for Packaging Applications <i>I. Ahmed, A. D. Chandio, J. Ashfaq, Pakistan</i>
10:20	23-108		Life Estimation and Thermal Degradation Kinetics of Ethylene-Propylene-Diene Monomer (EPDM) and Silicone Rubber (SiR) Blend <i>A. Ameer, N. Afaq, K. Hussain, M. Farooq, Pakistan</i>

10:40-11:00

Tea Break

Session – 17 (Room No. 108)

Wednesday, October 04, 2023, Time 11:00-12:40

Chairperson: Aijaz Ahmed Babar and Muhammad Shoab

11:00	23-N13	Advanced Organic Semiconducting Materials <i>S. Mohiuddin, Pakistan</i>
11:40	23-28	Investigation of Ductility and Damage Behavior of C/GFRP Composite Laminates Under Bending Loads <i>H. Ullah, V. V. Silberschmidt, Pakistan</i>
12:00	23-77	Effect of Sb Doping on the Structure and Electrical Properties of Bi- Zr-Multi-Elemental Doped KNN Ceramics for Energy Harvesting Applications <i>M. S. Habib, M. A. Rafiq, A. Maqbool, M. Zubair, Pakistan</i>
12:20	23-34	Study on Dielectric Properties of (Ba _{0.90} Sr _{0.10}) TiO ₃ Based Ceramic Capacitors for Energy Storage Applications <i>M. Ali, A. Amin , Pakistan</i>
12:40-14:00		Lunch and Prayer Break

Session – 18 (Main Auditorium)

Wednesday, October 05, 2023, Time 09:00-10:40

Chairperson: Yasir Nawab and Muhammad Ishaq

09:00	23-18	KN	Superalloys and Thermal Barrier Coatings; Aggressive Environments in Aero-engine <i>A. D. Chandio , Pakistan</i>
09:40	23-102	KN	Encapsulation of Organic Solar Cells from Liquid Pre-Cursors <i>I. Ahmed, A. D. Chandio, T. A. Chandio, Germany</i>
10:20	O-N7		Synthesis, Characterization and Application of MgFe ₂ O ₄ Nano Particles in Magneto Rheological Fluids <i>Muhammad Sohail, Fayyaz Hussain, Qamar Shafiq, Usama Tahir, Muhammad Ahsan, Zain-ul-Abdin Pakistan</i>
10:40-11:00			Tea Break

Session - 19 (MAIN AUDITORIUM)

Thursday, October 05, 2023, Time 11:00-12:40

Chairperson: Ali Dad Chandio and Muhammad Mansoor

11:00	23-1	V- KN	Self-Powered Photodetectors with Enhanced Performance Enabled by Surface-Passivated Hybrid Nanocomposites of All-Inorganic Perovskite Nanocrystals and Conductive Polymer (P3HT) <i>M. Sulaman, S. Yang, M. Qasim, A. Imran, China</i>
11:40	23-6	V- KN	Nitrogen-Doped Reduced Graphene Oxide/MoS ₂ ‘nanoflower’ Composites for High-Performance Supercapacitors <i>S. W. Bokhari, W. Gao, NewZealand</i>
12:20	23-69		Engineering Conducting Polymer; a Chemistry of Green Organic Solar Cell <i>S. Mohiuddin, I. Malik, A. Ansari, Pakistan</i>
12:40-14:00			Lunch and Prayer Break

Session – 20 (MAIN AUDITORIUM)

Thursday, October 05, 2023, Time 14:00-15:40

Chairperson: Iftikhar Ahmed and Mustehsin. B. Bhatti

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|-------------|--------|----|---|
| 14:00 | 23-N15 | KN | Composite Materials Solution for Personal and Vehicular Ballistic Protection
<i>Y. Nawab, K. Shaker, M. I. Khan, T. U. Khan, M. Umair, M. Jabbar, Pakistan</i> |
| 14:40 | 23-119 | | Electronic, Lead and Zinc Wastes Recycling Through Pyrometallurgical Routes
<i>Abdul Khaliq, Saudi Arabia</i> |
| 15:00 | 23-19 | | Effect of Heat Treatment on Impact Transition Temperature of High Strength Low Alloy Steel (HSLA) Steel Rods
<i>Shahid Akhtar, Pakistan</i> |
| 15:20 | 23-189 | | Nucleation of Graphite Nodules Formed in Medium Carbon Steel after a Graphitising Anneal
<i>Aqil Inam, Pakistan</i> |
| 15:40-16:00 | | | Tea Break |

Session – 21 (GALLERY)

Thursday, October 05, 2023, Time 16:00-17:15

Poster Session-II

Chairperson: Poster Judges

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|-------|--|--|--|
| 23-29 | | | Nano-NSAIDs Based Non-Conventional Oral Cancer Therapy
<i>Syeda Sohaila Naz, Pakistan</i> |
| 23-31 | | | To Investigate the Effect of Different Heat Treatment Cycles on the Mechanical Properties of Aerospace Grade AA-2219 Rolled Sheets |

- Amtul Basit, Pakistan*
- 23-38 Terahertz Time-Domain Spectroscopy of Thin and Flexible CNT-Modified MXene/Polymer Composites
Khadim Hussain, Pakistan
- 23-42 Development and Characterization of Superabsorbent Composite for Sustainable Environment
Y. Faisal, H. Tufail, Pakistan
- 23-43 Study for Synthesis of Cost Effective, High Yield and Bulk Scale Nano-Alumina Ceramic Material- a Novel Route
Sajjad Ahmed Khan, Pakistan
- 23-44 Facile Development of CPB Perovskites and TiO₂/CPB Nanocomposites for Antibacterial Applications
M. Yasmeen, A. S. Ejaz, M. A. Basit, Pakistan
- 23-51 Analysis of Coercivity of SmCo Magnetic Alloy at Elevated Temperature
K. Akram, N. Bashir, A. Haider, A. N. Khan, Pakistan
- 23-58 Effect of Temperature on Magnetic Characteristics of NdFeB Alloy
N. Bashir, K. Akram, A. Haider, A. N. Khan, Pakistan
- 23-59 Biodegradable Packaging Based on PVA and CMC Films Incorporated with Ascorbic Acid for Food Preservation
Rabia Hussain, Syeda Ammara Batool, Aqsa Aizaz, Dr. Muhammad Atiq Ur Rehman, Pakistan
- 23-69 Engineering Conducting Polymer; a Chemistry of Green Organic Solar Cell.
S. Mohiuddin, I. Malik, A. Ansari, Pakistan
- 23-84 ZnS/CaCO₃/PVA Modified Polyurethane Foam as an Economic Sorbent for Oil Spill Cleanup

- S. Saleem, S. Khalid, A. Nazir, Pakistan*
- 23-85 Development of Zinc Sulfide Based High Performance Supercapattery Nanocomposites
- S. Khalid S. Saleem, H. Nawaz, Y. Khan, Pakistan*
- 23-86 Thermal Imaging: an Alternative Approach for Crack Identification in Solar Panels
- M. Asif, M. A. Kamran, F. U. Zafar, R. Gul, Pakistan*
- 23-87 Gd-Doped ZnO Nanostructures Synthesized Via Co-Precipitation Method: Influence of Gd Contents on the Structural, Optical Properties and Photodegradation Characteristics
- M. K. Safeen, A. Kalsoom, Pakistan*
- 23-88 Analyzing the Salvaging Products of TiO₂/PbS Solar Paint Production Process Via Pseudo-SILAR Method
- I. Majeed, M. Yasmeen, M. A. Basit, Pakistan*
- 23-92 Fabrication of High-Performance Supercapacitor Electrode by In-Situ Polymerization of TiO₂/PANI/CNTs Composite
- A. Fazal, M. J. Iqbal, M. A. Raza, A. Asghar, M. Z. Iqbal, S. Riaz, S. Naseem, Pakistan*
- 23-94 Design and Synthesis of Textile Structured Carbon Electrode for Application in DSSC
- Anam, A. Ayoub, Pakistan*
- 23-95 Novel Water-Splitting Electrodes Based on One-Step Laser Fabrication Method
- A. Ali, Q. Ahmed, M. Rabbani, S. Aneel, Pakistan*
- 23-96 Effects of variation in Indentation Load and Dwell Time on the Vickers Microhardness of High Specific Strength Biomedical Alloys
- Muhammad Irfan Khan, Pakistan*

- 23-100 Highly Efficient Directly Fabricated Cu-Co Binary Oxides for Water Oxidation Reaction
A. Tabassum, S. Ata, Pakistan
- 23-104 Unveiling the Potential of Manganese-Doped Copper Sulfide for Enhanced Visualization of Latent Fingerprints (LFPs)
Z. Ejaz, S. Khalid, I. Naseem, W. Mahmood, Pakistan
- 23-105 Investigating the Influence of Doping on the Photoluminescence Characteristics of Mn²⁺ Doped ZnS Nanoparticles for Anti-Counterfeiting Ink Applications.
I. Naseem, S. Khalid, Z. Ejaz, W. Mehmood, Pakistan
- 23-117 Solid-State Reaction Synthesis of Li₇La₃Zr₂O₁₂ Solid Electrolyte for High-Energy-Density Lithium Metal Batteries
H. Ahmad, G. Ali, Pakistan
- 23-118 Synthesis and Characterization of Silver-Indium and Antimony Selenide: Role in Photocatalytic Degradation of Dyes
Aneeqa Liaqat, Pakistan
- 23-122 Investigation of Crystal Structure, Dielectric and Magnetic Properties of Cobalt Doped (x=0.0, x=0.2, x=0.35, x=0.5) Barium Hexaferrite (BaFe_{12-x}Co_xO₁₉)
Z. Abdullah, M. I. A. Baig, Pakistan
- 23-126 Role of Composite Electrolytes in Superior Ionic Conductivity and Stability for Lithium Batteries
Altamash Shabbir, Pakistan
- 23-129 Designing and Implementation of Recycling Regime to Use Aluminum Scrap for Cylinder Head Casting
W. Q. Khan, A. Rahman, N. N. Ahmed, M. A. Iqbal, M. U. Ghani, Pakistan
- 23-133 Selective Synthesis of Levoglucoscenone (LGO) Over Modified Phosphorus Doped

- Carbon Catalyst Using Cotton Stalk in a Continuous Auger Reactor
R. Aslam, H. A. U. Rehman, Pakistan
- 23-134 Optimizing the Synthesis Condition of ZnO Nanostructures for Thermometric Application
M. Akif, T. U. Din, K. Safeen, B. Ali, Pakistan
- 23-135 Heat Treatment of Al-Bronze Coated 304 Samples at Different Annealing Temperature to Check Its Behavior in Marine Environment.
Kainat, A. Inam, Pakistan
- 23-136 Development of Hybrid Fillers Based Heating Paints
A. R. Khan, M. Maqsood, S. M. A. Gillani, M. Abdullah, Pakistan
- 23-137 Mushroom Assisted and Chemically Synthesized Silver Nanoparticles for Ultra-Sensitive Biosensor Applications
Farhat Saira, Pakistan
- 23-138 Development of Fly and Bottom Ash Based Geopolymer Composites Construction Materials
M. A. Hussain, E. U. Haq, H. K. R. Chishti, W. Amin, M. A. Raza, A. Inam, T. Ahmad, A. Maqbool, Pakistan
- 23-145 Catalytic Hydrothermal Liquefaction of Cotton Stalk in the Presence of Hydrogen
J. Fareed, A. U. R. Majid, R. Aslam, Pakistan
- 23-156 Green Synthesis of Silver and Iron Nanoparticles and their Use in Waste Water Treatment
S. Saeed, M. Hina, Pakistan
- 23-159 Synthesis and Characterization of Oligoimide-Grafted Graphene Oxide-Epoxy Nanocomposites with Improved Thermal and Mechanical Properties
S. Saeed, M. I. Khan, Pakistan

- 23-163 Analysis of X-Ray Baggage Scanner Sheet: Characterization and Elemental Composition
S. Saeed, Q. Ullah, Pakistan
- 23-165 Advanced Materials for Solar Cell Technology and Energy Simulation
M. A. Ansari, G. Ciampi, S. Mohiuddin, S. Sibilio, Vanvitelli
- 23-169 Leveraging the Power of LIG Electrodes to Achieve Enhanced Functionality in WO₃ UV Photodetector
Muhammad Qasim, China
- 23-173 Development of Manganese Doped Zinc Aluminate Electrodes for Supercapacitor Applications
A. Raza, S. Mushtaq, M. A. Tariq, M. A. Raza, U. Latif, Pakistan
- 23-180 Physical & Biological Treatment of Drinking Water Using Nanostructured Graphene as Adsorbent.
T. Qadeer, M. Y. Khan, Pakistan
- 23-182 Effect of Rare Earth Element (cerium) on Microstructure, Mechanical Properties and Corrosion Behavior of NiTi Shape Memory Alloy
I. F. Sher, S. Z. Asghar, T. Ahmad, M. Kamran, F. Riaz, Pakistan
- 23-186 Cu-Doped ZnO Nanoparticle Electrode for Precise and Rapid Sodium Ion Detection in Water Samples
N. Shah, M. Y. Khan, Abdullah, Abdulhaq, Pakistan
- 23-188 Optimization of Welding Parameters of FSSW to Join Dissimilar Metals: AA6061-T6 and Low Carbon Steel
U. U. H. Pirzada, M. A. Chishti, W. Amin, Pakistan
- 23-191 Developing Nanomaterial-Based Adsorbents for Removing Dyes from Textile Wastewater
S. Z. Adil, M. Y. Khan, M. Altaf, Pakistan

23-N17

Zeeshan Abdullah, Pakistan

17:15-17:25

Ice Cream Break

Session – 22 (Room No. 108)

Thursday, October 05, 2023, Time 09:00-10:40

Chairperson: Sajjd Ur Rehman and Saif Ullah Awan

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|-------------|--------|----|--|
| 9:00 | 23-110 | KN | Potential for Establishing Ferroalloy Production Facility in Pakistan
<i>A. Ali, K. Mehmood, Z. U. Zabbih, M. Zafar, M. Arif, A. Hassan, Pakistan</i> |
| 9:40 | 23-132 | | Friction Stir Spot Welding of Dissimilar Metals
<i>W. Amin, U. U. H. Pirzada, M. A. Chishti, H. K. R. Chishti, M. A. Hussain, M. A. Raza, A. Inam, T. Ahmad, Pakistan</i> |
| 10:00 | 23-160 | | Investigation of Copper Addition on Corrosion Behavior of a Ferrous Based Shape Memory Alloy
<i>M. M. Rasheed, R. A. U. Rahman, S. Z. Abbas, Pakistan</i> |
| 10:20 | 23-175 | | Development and Characterization of Al-Ti Alloys for Aerospace & Engineering Applications
<i>M. A. Shafique, K. Yaqoob, A. Wadood, Pakistan</i> |
| 10:40-11:00 | | | Tea Break |

Session – 23 (Room No. 108)

Thursday, October 05, 2023, Time 11:00-12:40

Chairperson: Amjad Ali and Aamir Nusair

11:00	23-162	KN	Modern Trends and Practices in the Manufacturing of Nd-Fe-B Permanent Magnets <i>Sajjad Ur Rehman, China</i>
11:40	N-8	KN	Investigation on the Effect of Laser Power and Irradiation angle on the Bead Formation in High Power Fiber Laser Welding <i>Muhammad Sohail, Pakistan</i>
12:20	23-71		Achieving Record Mobility Enhancement in Organic Field Effect Transistors by Employing DPPDTT/Graphene Heterostructure <i>T. Afzal, M. J. Iqbal, U. Ibrar, M. Z. Iqbal, A. A. Khan, S. Riaz, S. Naseem, Pakistan</i>
12:40-14:00			Lunch and Prayer Break

Session – 25 (MAIN AUDITORIUM)

Friday, October 06, 2023, Time 09:00-10:40

Chairperson: Dalaver H. Anjum and Syed Khalid Shah

09:00	23-183	KN	Textile Fabric-Based Supercapacitor Electrode with Conductive Polymeric Coatings for Wearable Applications <i>A. S. Ghouri, R. Aslam, S. N. Hussain, M. S. Siddiqui, Pakistan</i>
09:40	23-176		Rapid Spheroidization of D6ac Steel through Divorced Eutectoid <i>M. Mansoor, N. Ejaz, N. Zubair, W. Hassan, Pakistan</i>
10:00	23-24		Smart and Intelligent Biodegradable Packaging Films for Sustainable Environment <i>I. Ahmed, J. Ashfaq, A. Ghaffar, A. D. Chandio, Z. Lutfi, Pakistan</i>
10:20	23-72		Synthesis and Characterization of Zinc Aluminate Based Electrodes for Super Capacitor Applications

M. A. Raza, U. Latif, S. Ali, M. F. Maqsood, Z. U. Rehman, Pakistan

10:40-11:00 Tea Break

Session – 26 (MAIN AUDITORIUM)

Friday, October 06, 2023, Time 11:00-12:40

Chairperson: Awais Satter Ghouri and Aamir Azam

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|-------------|--------|----|---|
| 11:00 | 23-2 | KN | Microscopy and Spectroscopy with Electrons
<i>Dalaver H. Anjum, UAE</i> |
| 11:40 | 23-N2 | KN | Nanoscale Surface Modification of particles/
substrate
<i>Dr Abdul Basit, China</i> |
| 12:20 | 23-111 | | Phase-Field Approach to Formation of
Aluminum Oxyhydroxide Nanofibrils on a
Liquid Aluminum Alloy Surface in Water-
Containing Atmospheres
<i>M. Sorokin, A. Khodan, I. Ahmad, S. Honey, Russia</i> |
| 12:40-14:00 | | | Lunch and Prayer Break |

Session – 27 (Room No. 108)

Friday, October 06, 2023, Time 09:00-10:40

Chairperson: Aqil Inam and Abdul Basit

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|-------|--------|----|--|
| 09:00 | 23-196 | KN | Organic Field Effect Transistors: Pursuit of
Stable and High Performing Devices in
Ambient Conditions
<i>T. Afzal, M. J. Iqbal, M. Zohaib, M. Z. Iqbal, M. A.
Raza, S. Riaz, Pakistan</i> |
| 09:40 | 23-82 | | Effect of Strontium and Cobalt Doping on
Supercapacitive Performance of Lanthanum -
Based Perovskite |

Z. U. Rehman, M. A. Raza, A. Tariq, U. Latif, R. Kanwal, M. F. Maqsood, M. F. Khan, Pakistan

- 10:00 23-17 Synergistic Effect of Surface Hydrophobicity and In-Vitro Antimicrobial Activity of Polymeric Nano-Formulation in Textile Finishing
Sana Javaid, Pakistan
- 10:20 23-115 Investigation of the Influence of Bonding Parameters on the Homogenous Diffusion Bonding of Copper
S. Khan, M. A. Rabbani, H. Abdullah, H. Alid, U. Ahmad, B. Ashfaq, Pakistan
- 10:40-11:00 Tea Break

Session – 28 (Room No. 108)

Friday, October 06, 2023, Time 11:00-12:40

Chairperson: Tahmina Afzal and Syed Khalid Shah

- 11:00 23-197 KN Graphitising Anneal: A Potential Process to Develop Free-Cutting Steels without Toxic Alloying
Aqil Inam, Pakistan
- 11:40 23-153 Effects of Ca Addition on the Hydrogen Evolution and Degradation Behavior of AZ31 Magnesium Alloy in Simulated Body Fluids
M. H. Qureshi, U. M. Chaudry, A. Farooq, Pakistan
- 12:00 23-39 Polystyrene Novel Composites with Enhanced Thermal Stability and Improved Conductivity
S. U. Rehman, S. Javaid, Pakistan
- 12:20 23-114 Mechanical and Microstructural Characterization of Diffusion-Bonded Copper-Nickel Joint Interface
S. Khan, Z. Ali, Pakistan

12:40-14:00

Lunch and Prayer Break

CONCLUDING CEREMONY

**National Centre for Physics, Islamabad
Main Auditorium**

Friday, 06th October 2023

15:20	Guests to be seated
15:30	Arrival of the Chief Guest
15:35	Recitation from the Holy Quran
15:40	Summary of the Event by General Secretary PAMF
15:50	Comments / Feedback by the Participants
16:00	Concluding Address by the Chief Guest
16:10	Distribution of Souvenirs / Prizes
16:20	Vote of Thanks by the President PAMF

Refreshment