Dr. Muhammad Mumtaz

Professor (Tenured)

Ex-Director (Academics & Examination)

Room No. 208, Department of Physics,
Faculty of Sciences (FS),
Ibn-Al-Haythum Block, International Islamic University (IIU), Sector H-10 Islamabad (44000), Pakistan.
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PERSONAL

Father's Name	**Ghulam Qasim**
Date & Place of Birth	**May 04, 1975, Bhakkar, Pakistan.**
CNIC #	**61101-7899717-7**
Passport #	**AE0277173**
Marital Status	**Married**
Nationality	**Pakistani**
Languages	**English, Urdu, Saraiki and Punjabi.**
Permanent Address:	**Village Ravi, Tehsil & P/O Kallur Kot, District Bhakkar, Punjab, Pakistan.**
Present/Postal Address:	**H # 496, St. # 22, Sector F-15/1 (JKCHS), Islamabad, Pakistan.**

ACADEMIC QUALIFICATION

Post Doc. -2 — **November 20, 2017 – April 27, 2018**
[Physics (Experimental Condensed Matter Physics)] — University of Missouri St. Louis, USA

Post Doc. -1 — **July 01, 2012 – June 20, 2013**
[**Physics** (Experimental Condensed Matter Physics)] — Institute of Physics (IOP) CAS, Beijing, China

Ph. D. — **April 27, 2004 – November 25, 2009**
[**Physics** (Experimental Condensed Matter Physics)] — Quaid-i-Azam University, Islamabad, Pakistan

M. Phil. — **February 01, 2002 – February 26, 2004**
[**Physics** (Experimental Condensed Matter Physics)] — Quaid-i-Azam University, Islamabad, Pakistan
(First Division)

M. Sc. — **September 20, 1995 – March 26, 1998**
Physics — University of the Punjab, Lahore, Pakistan
(First Division)

B. Sc. — **September 15, 1992 – August 12, 1995**
Physics, Maths. (A&B) — University of the Punjab, Lahore, Pakistan
(First Division)

F. Sc.	**July 15, 1990 – August 05, 1992**
Pre-Engineering	Board of Intermediate & Secondary Education, Sargodha, Pakistan
(First Division)	
Matriculation	**March 01, 1988 – April 24, 1990**
Science Group	Board of Intermediate & Secondary Education, Sargodha, Pakistan
(First Division)	
B. Ed.	**March 01, 1998 – August 12, 2002**
Teaching & Administration	Allama Iqbal Open University, H-8 Islamabad, Pakistan
(First Division)	

RESEARCH INTERESTS

Experimental Condensed Matter Physics (Superconductivity, Nano-superconductor Composites and Energy storage materials**)**

M. Phil Thesis Title

"Characterization of $Cu_{1-x}Tl_xBa_2Ca_2Cu_4O_{12-\delta}$ superconductor thin films"

Ph. D Thesis Title

"Synthesis and characterization of $Cu_{0.5}Tl_{0.5}Ba_2Ca_{n-1}Cu_{n-y}Zn_yO_{2n+4-\delta}$; n = 3, 4 superconductors"

Post Doc.-1 Project Title

"Study of Quantum Phenomena in Mesoscopic Superconductors"

Post Doc.-2 Project Title

"High performance anode material for Lithium-ion batteries"

PROFESSIONAL EXPERIENCE

- Served for about **four (04)** years (from 14-05-1998 to 25-04-2002) as Lecturer (BPS-17), Department of Physics, Army Public School and College (Boys) Lalazar, Rawalpindi, Pakistan.
- Served for about **eight (08)** years (from 27-04-2002 to 19-03-2010) as a Lecturer (BPS-17), Department of Physics in Federal Government College (Men) F-10/4, Islamabad, Pakistan.
- Served for about **seven and half ($7\frac{1}{2}$)** years (from 20-03-2010 to 23-08-2017) as an Assistant Professor (TTS), Department of Physics, Faculty of Sciences (FS), International Islamic University, H-10 Islamabad, Pakistan.
- Served for about **Four years and Ten months** (from 23-08-2017 to 10-06-2022) as an Associate Professor (Tenured), Department of Physics, Faculty of Sciences (FS), International Islamic University, H-10 Islamabad, Pakistan.

- ❖ Presently, working as Professor (Tenured) since June 11, 2022, Department of Physics, Faculty of Sciences (FS), International Islamic University Islamabad, Pakistan.

I am well-versed in the following courses at graduation level.

1. Materials Science (I & II)
2. Solid-State Physics (I & II)
3. Semiconductor Physics
4. Statistical Mechanics
5. Electrodynamics.
6. Quantum Mechanics.
7. Atomic & Molecular Physics
8. Experimental Techniques (I & II)
9. Classical Mechanics
10. Nano-structured Materials
11. Nano-structural Characterization Techniques
12. Advanced Mathematical Methods of Physics
13. Physics of superconductivity
14. Nano-science in superconductivity
15. Composite Materials

ADMINISTRATIVE EXPERIENCES

Served for about Ten (10) months (from November, 2021 to August, 2022) as Director (Academics & Examination), International Islamic University, H-10 Islamabad, Pakistan.

RESEARCH EXPERIENCES

- Nearly **seven (07)** years research experience (from 2003 to 2010) in Material Science Laboratory, Department of Physics, Quaid-i-Azam University Islamabad, and Pakistan, where I actively contributed in establishing the following characterization techniques during my M. Phil and Ph. D research work.
    1. Samples preparation
    2. Resistivity measurements
    3. Critical current density measurements
    4. Ac-susceptibility measurements
    5. Fourier Transform Infrared (FTIR) absorption spectroscopy
    6. Dielectric measurements

7. X-ray diffraction (XRD) and crystal structure analysis
8. X-ray Photoemission Spectroscopy (XPS).
9. Scanning Electron Microscopy (SEM) and EDX measurements.
10. Oxygen content determination

I am still involved in the process of developing rf & dc-sputtering systems for the deposition of thin films of superconductors and magnetic high-density storage materials.

- Worked about **one (01)** year (1th July 2012 to 20th June 2013) as an International Young Scientist Fellow (Post Doc) at Institute of Physics (IOP), Chinese Academy of Sciences (CAS), Beijing 100084, R. China, and got the following expertise during my stay at IOP in R. China.

1. **I got expertise on the following latest experimental equipments/techniques**
   (i) Physical Properties Measurement System (PPMS) by Quantum Design
   (ii) Hall Effect measurements
   (iii) Magnetron sputtering for superconducting thin films
   (iv) Ultraviolet photolithography
   (v) Electron-beam lithography for nano-structured superconducting thin films
   (vi) Pulse Laser Deposition (PLD) for the growth of superconducting thin films
   (vii) Scanning Electron Microscopy (SEM) and Electron Dispersive Spectroscopy (EDS)
   (viii) FTIR spectroscopy
2. **I got expertise on the following theoretical Models**
   (i) Aslamazov–Larkin (AL) Model
   (ii) Lawrence–Doniach (LD) Model
   (iii) Maki–Thompson (MT) Model
   (iv) Kosterlitz-Thouless (KT) transition in 2D systems
3. **I developed the International Collaborations with**
   (i) Beijing National Laboratory of Condensed Matter Physics SC03 research group at Institute of Physics, Chinese Academy of Sciences, Beijing 100190 China.
   (ii) Department of Engineering Mechanics, Center for Nano and Micro Mechanics, Tsinghua University, Beijing 100089, China.

- Worked for about **Six (06)** months (November 2017 to April 2018) as "Visiting Scientist" at Center for Nanoscience (William Clay building), Department of Physics and Astronomy, University of Missouri St. Louis, USA.
  I got expertise on the following latest experimental equipment/techniques
  (i) Cyclic voltammetry
  (ii) Battery testing

- More than **Thirteen (13)** years research experience from 20th March 2010 to date in Material Research Laboratory, Department of Physics, FS, International Islamic University, H-10 Islamabad, Pakistan.

NATIONAL/ INTERNATIONAL COLLABORATIOS

I have the following collaborations at National and International level

1. Materials Science Laboratory, Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan.
2. Experimental Physics Labs, National Centre for Physics, Quaid-i-Azam University, Islamabad, Pakistan.
3. Nano Science & Catalysis Division, National Center for Physics, Shadhara Valley Road, Quaid-i-Azam University Campus, Islamabad 45320, Pakistan
4. Department of Sciences and Humanities, FAST, National University of Computer & Engineering Sciences, Islamabad, Pakistan.
5. School of Chemical and Materials Engineering (SCME), National University of Science and Technology (NUST) H-12, Islamabad, Pakistan.
6. School of Natural Sciences (SNS), National University of Science and Technology (NUST) H-12, Islamabad, Pakistan.
7. Ibn-e-Sina Institute of Technology, H-11/4, Islamabad, Pakistan
8. Central Diagnostic Laboratory, Physics Division PINSTECH, Islamabad 45500, Pakistan.
9. Department of Physics Research, Institute for Research & Medical Consultations (IRMC), Imam Abdulrahman Bin Faisal University, P.O. Box 1982, Dammam 31441, Saudi Arabia.
10. Institute of Physics, Chinese Academy of Sciences and Beijing National Laboratory of Condensed Matter Physics, Beijing 100190, China.
11. Department of Engineering Mechanics, Centre for Nano and Micro Mechanics, Tsinghua University, Beijing 100089, China.
12. Department of Physics and Astronomy, Center for Nanoscience (William Clay building), University of Missouri St. Louis, USA.
13. School of Material Science and Engineering, Xian Polytechnic University, Xian 710048, Shaanxi, China

BS RESEARCH PROJECTS SUPERVISED AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Group (BS 2014)**
   {Syed Muhammad Raza (01-FBAS/BSPHY/F10), Daniyal Hamza Mehdi (06-FBAS/BSPHY/F10), Syed Hussain Naazzar Bukhari (14-FBAS/BSPHY/F10), and Muhammad Moeed Awan (19-FBAS/BSPHY/F10)}
   Project title: "Observation of Josephson Junctions like weak links behavior in nanoparticles/superconductor composites"
2. **Group (BS 2015)**
   {M. Waqas-ur-Rehman (70-FBAS/BSPHY/S11)**,** Shoaib Azeem (73-FBAS/BSPHY/S11), Saad Ullah (74-FBAS/BSPHY/S11) and Ahsan Akhtar (90-FBAS/BSPHY/S11)}
   Project title: "Dielectric properties of $(Zn)_y$/CuTl-1223 nano-superconductor composites"
3. **Group (BS 2016)**
   {Naseem Hassan (379-FBAS/BSPHY/S13)**,** Moin Khan (382-FBAS/BSPHY/S13), Anas Mehmood **(**387-FBAS/BSPHY/S13) and Waqas Ahmed **(**386-FBAS/BSPHY/S13)}
   Project title: "Inter-comparison of activation energy of (Ni, Co, Cr) nanoparticles added CuTl-1223 superconductor"
4. **Group (BS 2017)**
   {Mustehsin (518-FBAS/BSPHY/F13)**,** Usama Tehseen (511-FBAS/BSPHY/F13) and Muhammad Ali (506-FBAS/BSPHY/F13)**}**
   Project title: "Study of Dielectric Properties of Uncoated and Silica Coated Hematite (α-Fe_2O_3) nanoparticles"
5. **Group (BS 2019)**
   {Sana Ullah (890-FBAS/BSPHY/F15)**,** Hamza Nazir (881-FBAS/BSPHY/F15) and Bahar Hussain (854-FBAS/BSPHY/F15)**}**
   Project title: "Study of Dielectric Properties of Un-coated and Silica Coated $BaFe_2O_4$ Nanoparticles"
6. **Group (BS 2020)**
   {Qazi Hashmat Ali Khan (1032-FBAS/BSPHY/F16) and Muhammad Hassaan (1035-FBAS/BSPHY/F16)**}**
   Project title: "Study of Dielectric Properties of Un-coated and Silica Coated Barium Hexaferrites"
7. **Group (BS 2020)**
   {Qamar Zaman (1022-FBAS/BSPHY/F16) and Mudassir Abdul Aziz (1119-FBAS/BSPHY/F16)**}**
   Project title: "Impedance and Modulus Study of Un-coated and Silica Coated Barium Hexaferrites"
8. **Group (BS 2021)**
   {Arslan Bashir (1168-FBAS/BSPHY/F17), Muhammad Rashid (1186-FBAS/BSPHY/F17), Tayyab Umer (1191-FBAS/BSPHY/F17)**}**
   Project title: "Synthesis and Frequency Dependent Dielectric Properties of $Co_{1-x}Ba_xFe_2O_4$ Nanoparticles"
9. **Group (BS-I 2022)**
   {Saqib Nazir (1386-FBAS/BSPHY/F18), Umair Ali (1387-FBAS/BSPHY/F18), Muhammad Hammad Nawaz (1441-FBAS/BSPHY/F18)**}**
   Project title: "Dielectric Properties of Uncoated and Silica Coated Strontium Hexaferrites"
10. **Group (BS-II 2023)**
    {Muhammad Usama Malik (1468-FBAS/BSPHY/S19), Muhammad Inam-Ul-Haq (1495-FBAS/BSPHY/S19), Saifullah Awan (1534-FBAS/BSPHY/S19)**}**
    Project title: "Effect of Silica Coating on Impedance and Modulus Properties of Strontium Hexaferrites"

11. **Group (BS-III 2023)**

{Rehan Ali (1506-FBAS/BSPHY/S19), Arslan Tahir (1514-FBAS/BSPHY/S19), Danyal Arshad (1542-FBAS/BSPHY/S19)**}**

Project title: "Effect of Silica Coating on Dielectric Properties of Calcium Ferrite Nanoparticles"

MSc RESEARCH PROJECTS SUPERVISED AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Group (M.Sc. 2014)**

{Ejaz Ali (156-FBAS/MScPHY/S12), Ismail Ikram (161-FBAS/MScPHY/S12), and Muhammad Ahmed Khan (178-FBAS/MScPHY/S12)}

Project title: "Dielectric properties of $(Ag)_y$/CuTl-1223 nano-superconductor composites"

2. **Group (M.Sc.2014)**

{Sana Tariq (183-FBAS/MScPHY/S12), and Ayesha Iqbal (189-FBAS/MScPHY/S12)}

Project title: "Effects of silver nanoparticles addition on superconducting properties of CuTl-1223 matrix"

3. **Group (M.Sc. 2014)**

{Anam Shah (132-FBAS/MScPHY/F11)}

Project title: "Noble metals (Ag, Au) nanoparticles addition effects on superconducting properties of CuTl-1223 phase"

4. **Group (M.Sc. 2014)**

{Usman Sajid (165-FBAS/MScPHY/S12) and Zaheer Ahmed (193-FBAS/MScPHY/S12)}

Project title: "Dielectric properties of $(NiFe_2O_4)_x$/CuTl-1223 nano-superconductor composites"

5. **Group (M.Sc. 2015)**

{Muhammad Naveed (224-FBAS/MScPHY/S13), Muhammad Imran (230-FBAS/MScPHY/S13), and Badshah Amin (162-FBAS/MScPHY/S13)}

Project title: "Dielectric properties of $(ZnO)_y$/CuTl-1223 nano-superconductor composites"

6. **Group (M.Sc. 2015)**

{M. Naqqash Haider (345-FBAS/MScPHY/F13), Danyal Tayab (359-FBAS/MScPHY/F13), and M. Junaid Asghar (364-FBAS/MScPHY/F13)}

Project title: "Comparison of superconducting transport properties of different magnetic nanoparticles-CuTl-1223 matrix"

7. **Group (M.Sc. 2016)**

{Aftab Ahmed Khan (425-FBAS/MScPHY/S14)}

Project title: "Comparisons between Ni and Co ferrites/CuTl-1223 nanoparticles-superconductor composites"

8. **Group (M.Sc. 2016)**

Muhammad Zahoor Burki (425-FBAS/MScPHY/S14)

Project title: "Fabrication of Hetero Junction Photoanode for Solar Water Splitting"

9. **Group (M.Sc. 2019)**

{M. Fahad Aamir (759-FBAS/MScPHY/F17), M. Awais Imtiaz (760-FBAS/MScPHY/F17), and Abdul Rehman (776-FBAS/MScPHY/F17)}

Project title: "Comparative dielectric investigation of MFe_2O_4 nanoparticles (M = Co, Mg, Cr, Mn)"

10. **Group (M.Sc. 2020)**
    {M. Fasih Aamir (968-FBAS/MSCPHY/F18), Iqrar Saqib (951-FBAS/MSCPHY/F18), and Jibran Nisar (950-FBAS/MSCPHY/F18)}
    Project title: "Electric modulus spectroscopy of $(Zn)_x$/CuTl-1223 nanoparticles superconductor composites"
11. **Group (M.Sc. 2022)**
    {Haider Ali (1096-FBAS/MSCPHY/S20), Mobin Ahmed (1099-FBAS/MSCPHY/S20), Habib Ullah Tariq (1106-FBAS/MSCPHY/S20)**}**
    Project title: "Effect of Lithium Doping on Frequency Dependent Dielectric Properties of Manganese Ferrite Nanoparticles"

MS STUDENTS SUPERVISED AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Zahir Usman** (3-FBAS/MSPHS/F10)
   Thesis title: "Dielectric properties of carbon nanotubes added CuTl-1223 superconductor"
2. **Muhammad Kamran** (12-FBAS/MSPHY/F10)
   Thesis title: "Metallic oxide nanoparticles addition effects on dielectric properties on CuTl-1223 superconductor"
3. **Asif Iqbal Bhatti** (19-FBAS/MSPHY/F10)
   Thesis title: "Fluctuation induced conductivity of nanoparticles added CuTl-1223 superconductor"
4. **Muhammad Shahid** (31-FBAS/MSPHY/F10)
   Thesis title: "Dielectric and magnetic properties of CoZn-ferrite/SiO_2 nanocomposites"
5. **Farrha Naeem** (39-FBAS/MSPHY/F10)
   Thesis title: "Synthesis and characterization of metal oxide nanoparticles/superconductor composites"
6. **Muhammad Imran** (46-FBAS/MSPHY/F10)
   Thesis title: "Effects of thickness of ZnSe thin films on their physical properties"
7. **Ghulam Hussain** (111-FBAS/MSPHY/F12)
   Thesis title: "Study of critical regime of $(Ag)_x$/CuTl-1223 nano-superconductor composites via excess conductivity analyses"
8. **Munawar Zaman** (112-FBAS/MSPHY/F12)
   Thesis title: "Effect of Al_2O_3 nanoparticles in CuTl-based superconductor"
9. **Abrar Ahmed Khan** (117-FBAS/MSPHY/F12)
   Thesis title: "Berezinskii-Kosterlitz-Thouless (BKT) Transition in K-doped Fe-based superconductor"
10. **Jaffer Saddique** (127-FBAS/MSPHY/F12)
    Thesis title: "Synthesis and characterization of molybdenum oxide-based nanostructures"
11. **Rafi Ullah** (128-FBAS/MSPHY/F12)
    Thesis title: "Optimization of Al-doped ZnO nanorods for photovoltaic applications"
12. **Khalid Khan** (154-FBAS/MSPHS/S13)
    Thesis title: "Inter-grain coupling effect on superconductivity of $(Zn)_x$/CuTl-1223 nano-superconductor composites"
13. **Mian Adnan Asghar** (211-FBAS/MSPHS/F13)
    Thesis title: "Localization effect on dielectric properties of $(Ni)_x$/CuTl-1223 nano-superconductor Composites"

14. **Ibraheem** (224-FBAS/MSPHY/F13)
    Thesis title: "Inter-grain coupling effect on superconducting properties of CuTl-1223 matrix by the addition of zinc nanoparticles"
15. **Khurram Shehzad** (235-FBAS/MSPHY/F13)
    Thesis title: "Structural and dielectric properties of $(Al_2O_3)_x$/CuTl-1223 nanoparticles-superconductor composites"
16. **Irfan Ali** (236-FBAS/MSPHY/F13)
    Thesis title: "Role of Cu nanoparticles in CuTl-1223 superconductors"
17. **Ghulam Abbas** (238-FBAS/MSPHS/F13)
    Thesis title: "Structural and dielectric properties of $(Fe_2O_3)_x$/CuTl-1223 nano-superconductor composites"
18. **Iftikhar Ahmad** (255-FBAS/MSPHY/S14)
    Thesis title: "Effect of MgO nanoparticles on superconducting properties of CuTl-1223 phase"
19. **Muhammad Waqas Rabbani** (268-FBAS/MSPHY/S14)
    Thesis title: "Infield response of $(Ag)_x$ /CuTl-1223 nanoparticles superconductor composites"
20. **Sajid Ali** (270-FBAS/MSPHY/S14)
    Thesis title: "Tuning of dielectric properties of CuTl-1223 matrix with cobalt (Co) nanoparticles"
21. **Bilal Majeed** (272-FBAS/MSPHY/S14)
    Thesis title: "Investigation on critical regime and pseudo-gap of $(Fe_2O_3)_x$/CuTl-1223 nanoparticles-superconductor composites via excess conductivity"
22. **Muhammad Touqeer** (287-FBAS/MSPHY/F14)
    Thesis title: "Frequency dependent dielectric properties of $(MnFe_2O_4)_x$/CuTl-1223 nanoparticles-superconductor composites"
23. **Ahmed Saleh Raja** (302-FABS/MSPHY/F14)
    Thesis title: "Tuning of dielectric parameters of CuTl-1223 superconductor by varying chromium (Cr) nanoparticles contents"
24. **Rashid Khan** (307-FBAS/MSPHY/F14)
    Thesis title: "Superconducting properties of $(MnFe_2O_4)_x$/CuTl1223 composites"
25. **Azhar Saeed** (310/FBAS-MSPHY/F-14)
    Thesis title: "Theoretical analysis of excess conductivity in Cu-nanoparticles added CuTl-1223 superconductor"
26. **Muhammad Naveed** (335-FBAS/MSPHY/F15)
    Thesis title: "Conduction Mechanism and Impedance Spectroscopy of $(MnFe_2O_4)_x$/CuTl-1223 Superconductor"
27. **Waqas Ahmad** (352-FBAS/MSPHY/F15)
    Thesis title: "Infield superconducting properties of $(Au)_x$/CuTl-1223 composites"
28. **Badash Amin** (366-FBAS/MSPHY/F15)
    Thesis title: "Role of CoO Nanoparticles in Impedance of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Superconductor"
29. **Muhammad Imran** (369-FBAS/MSPHY/F15)
    Thesis title: "Role of CoO nanoparticles in tuning the dielectric behavior of CuTl-1223 superconductor"

30. **Tanzeel Ul Rehman** (372-FBAS/MSPHY/F15)
    Thesis title: "Reduction of Jahn-Teller Distortion by Replacing Cu $3d^9$ with Zn $3d^{10}$ at CuO_2 Planes of CuTl-1223 Superconductor"
31. **Mirza Hassan Baig** (420-FABS/MSPHY/S16)
    Thesis title: "Temperature Dependent Magnetic Proprieties of $(CoO)_x$/(CuTl-1223) Nanoparticles-Superconductor Composites**"**
32. **Muhammad Qasim** (392/FBAS-MSPHY/S-16)
    Thesis title: "Comparative Impedance Response of Ferromagnetic (Co) and Anti-ferromagnetic (Cr) Nanoparticles Added CuTl-1223 Superconductor"
33. **Sheharyar Akhtar** (397-FBAS/MSPHY/S16)
    Thesis title: "Temperature Dependent Dielectric Modulus of $(MnFe_2O_4)_x$/CuTl-1223 Nanoparticles-Superconductor Composites"
34. **Hassan Shabbir** (413-FBAS/MSPHY/S16)
    Thesis title: "Infield Superconducting Properties of Mg-doped CuTl-1223 Phase"
35. **Ghazanfar Ghaffar** (499-FBAS/MSPHY/F17)
    Thesis title: "Synthesis, Characterization and Activity of Al-doped Nickel Oxide Nanoparticles against Multidrug-Resistant Bacteria"
36. **Muhammad Amir Durrani** (498-FBAS/MSPHY/F17)
    Thesis title: "Comparative Dielectric Response of Ferromagnetic (Co) and Anti-Ferromagnetic (Cr) Nanoparticles Added CuTl-1223 Superconductor"
37. **Hafiz Haris Ahmed Abbasi** (516-FBAS/MSPHY/F17)
    Thesis title: "Electric Modulus Spectroscopy of $(Ag)_x$/CuTl-1223 Nanoparticles-Superconductor Composites"
38. **Arshid Khan** (540-FBAS/MSPHY/F18)
    Thesis title: "Gold Nanoparticles Effect on Excess Conductivity of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Superconducting Phase"
39. **Muhammad Khan** (541-FBAS/MSPHY/F18)
    Thesis Title: "Temperature Dependent Dielectric Response of Non-magnetic Zn Nanoparticles added CuTl-1223 Superconductor"
40. **Muhammad Ali** (544-FBAS/MSPHY/F18)
    Thesis Title: "Synthesis and Electrochemical Properties of $(GO)_x$/(α-Fe_2O_3) Nanohybrids"
41. **Tajammal Hussain** (559-FBAS/MSPHY/F18)
    Thesis Title: "Superconducting Properties of $(Cr_2O_3)_y$/CuTl-1223 Nanoparticles-Superconductor Composites"
42. **Imran Khan** (552-FBAS/MSPHY/F18)
    Thesis title: "Infield Superconducting Properties of $(Co_3O_4)_x$/CuTl-1223 Nanoparticles-Superconductor Composites"
43. **Zuhda Saeed** (525-FBAS/MSPHY/F18)
    Thesis title**:** "Synthesis and electrochemical properties of $(MWCNTs)_x/MgFe_2O_4$ nanohybrids"
44. **Muhammad Mudassar Khan** (597-FBAS/MSPHY/F19)
    Thesis title: "Electrochemical properties of $(MWCNTs)_x/LiFe_2O_4$ nanohybrids"
45. **Ghazanfar Mehmood** (627-FBAS/MSPHY/F19)
    Thesis title: "AC-conduction properties of $(GO)_x/LiFe_2O_4$ nanohybrids"

46. **Bahar Hussain** (629-FBAS/MSPHY/F19)
    Thesis title: "Study of $(GO)_x/\alpha\text{-}Fe_2O_3$ composites for energy storage applications"

MS STUDENTS Co-SUPERVISED AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Faisal Jabber** (18-FBAS/MSPHY/F10)
   Thesis title: "Effects of irradiation of heavy ions on ZnSe thin films on their physical properties"
2. **Sumayyah Naeem** (41-FBAS/MSPHY/F10)
   Thesis title: "Synthesis and characterization of ferrite nanoparticles/superconductor composites"
3. **Faisal Zeb** (53-FBAS/MSPHY/F10)
   Thesis title: "Synthesis and characterization of Co-ferrite/SiO_2 nanocomposites"
4. **Adnan Razaq Qureshi** (116-FBAS/MSPHY/F12)
   Thesis title: "Temperature dependent magnetic properties of uncoated and coated cobalt ferrite nanoparticles"
5. **Shahid Ahmed Khan** (124-FBAS/MSPHY/F12)
   Thesis title: "Study of cobalt ferrite nanoparticles/CuTl-based superconductor composites"
6. **Muhammad Sohail** (497-FBAS/MSPHY/F17)
   Thesis title: "Frequency Dependent Dielectric Response of $(Ag)_x$ /$(Cu_{0.5}Tl_{0.5})Ba_2Ca_2Cu_3O_{10-\delta}$ Nanoparticles Superconductor Composites"

MS STUDENTS SUPERVISED AT DEPARTMENT OF MECHANICAL ENGINNERING, FET, IIUI

1. **Muhammad Mujahid** (37-FET/MSME/F15)
   Thesis title: "Synthesis of Cobalt Doped Nickel Ferrites Nanoparticles and Decorated with MWCNTs to Form Nanohybrid as Anode for Lithium-Ion Batteries"

MS STUDENTS Co-SUPERVISED AT DEPARTMENT OF ENVIRNMENTAL SCIENCE, FBAS, IIUI

1. **Imran Khan** (263-FBAS/MSES/F15)
   Thesis title: "Removal of Chromium from Water using Graphene Oxide Nanoparticles"

MS STUDENTS SUPERVISED AT DEPARTMENT OF PHYSICS, AIOU, ISLAMABAD

1. **Muhammad Arshad** (AN710956) (Department of Physics, Allama Iqbal Open University, Islamabad, Pakistan)
   Thesis title: "Fluctuation Induced Conductivity (FIC) analysis of Al_2O_3 nano-particles/CuTl-1223 superconductor composites"
2. **Muhammad Tariq Saeed** (AS751895) (Department of Physics, Allama Iqbal Open University, Islamabad, Pakistan)
   Thesis title: "Synthesis and dielectric properties of magnesium-oxide nanoparticles"
3. **Mehrosh Fatima** (Roll No. BN721790) (Department of Physics, Allama Iqbal Open University, Islamabad, Pakistan)

Thesis title: "Comparative Electric Modulus Spectroscopic Study of Ferromagnetic (Co) and Anti-Ferromagnetic (Cr) Nanoparticles Added CuTl-1223 Superconducting Phase"

MS STUDENTS Co-SUPERVISED AT DEPARTMENT OF PHYSICS FUU, ISLAMABAD

1. **Abdul Rehman** (7888APY/MPHILPHY/AUT-12) (Department of Physics, Federal Urdu University of Arts, Science and Technology, Islamabad, Pakistan)
   Thesis title: "Fluctuation Induced Conductivity (FIC) analysis of $(CoFe_2O_4)_x$ /CuTl-1223 nano-superconductor composites"
2. **Muhammad Siddique** (409APY/MPHILPHY/AUT-12) (Department of Physics, Federal Urdu University of Arts, Science and Technology, Islamabad, Pakistan)
   Thesis title: "Excess conductivity analysis of nano-Au added CuTl-1223 superconducting matrix"

MS STUDENTS Co-SUPERVISED AT DEPARTMENT OF PHYSICS, RIPHAH INTERNATIONAL UNIVERSITY, ISLAMABAD

1. **Muhammad Raza Hussain** (CMS 13327)
   Thesis title: "The Structural and Superconducting Properties of Diamond Nanoparticles added CuTl-1223 Phase"
2. **Muhammad Saqib** (CMS 12806)
   Thesis title: "Tuning of dielectric parameters by varying Diamond Nanoparticles contents in CuTl-1223 superconducting matrix"
3. **Nazir Hussaion** (CMS 16988)
   Thesis title: "Pressure effects on transport properties of $(Ag)_x$/CuTl-1223 nanoparticles-superconductor composites"
4. **Yaseen Muhammad** (CMS 17056)
   Thesis title: "Comparative study of ambient and high pressure synthesized $(Cu)_x$/CuTl-1223 nanoparticles-superconductor composites"

PhD STUDENTS SUPERVISED IN AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Abdul Jabbar** (01-FBAS/PhDPHY/S10)
   Thesis Title: "Synthesis and characterization of metal-oxide nanoparticles added CuTl-based superconductor"
2. **Irfan Qasim** (10-FBAS/PhDPHY/S11)
   Thesis Title: "Structural and superconducting properties of CuTl-12(n-1)n; n = 3, 4 nanostructures composites"
3. **Muhammad Waqee-ur-Rehman** (12-FBAS/PhDPHY/F11)
   Thesis Title: "Infield superconducting transport properties of magnetic nanostructures-CuTl-1223 composites.
4. **Liaqat Ali** (37-FBAS/PhDPHY/F-14)
   Thesis Title: "Metallic nanoparticles effects on physical properties of CuTl-1223 superconductor"
5. **Mubasher** (81-FBAS/PhDPHY/F-16)
   Thesis Title: $(MWCNTs)_x$/Spinal Ferrites Nanohybrids: High Performance Anode Materials for Lithium-Ion Battery

6. **Abrar Ahmed Khan** (50-FBAS/PhDPHY/F-15)
   Thesis Title: "Impedance Spectroscopy of Metallic Nanoparticles Added CuTl-based Superconductor"

PhD STUDENTS Co-SUPERVISED IN AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Muhammad Kamran** (22-FBAS/PhDPHY/S13)
   Thesis Title: "Study of structural, magnetic and dielectric properties of ferrite /chromite nanoparticles.

BS STUDENTS RESEARCH PROJECTS UNDER SUPERVISION AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. Group (BS-I 2024)

{Muhammad Ahmed Saleem (1837-FBAS/BSPHY/S20), Muhammad Yasir (1846-FBAS/BSPHY/S20), Muhammad Junaid Raza (1853-FBAS/BSPHY/S20)**}**
Project title: "Synthesis and Frequency Dependent Dielectric Properties of $Cr_{1-x}Ba_xFe_2O_4$ Nanoparticles"

MS STUDENTS UNDER SUPERVISION AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Habib Ullah Tariq** (677-FBAS/MSPHY/F22)
   Thesis Title: Exploring the effect of $ZnFe_2O_4$ with Carbonaceous Materials as Electrode for Energy Storage Devices

Ph. D STUDENTS UNDER SUPERVISION AT DEPARTMENT OF PHYSICS, FBAS, IIUI

1. **Miraj Ud Din** (115-FBAS/PHDPHY/F20)
   Thesis Title: Design and Numerical Investigations of [CH_3NH_3/ $CH(NH_2)_2$ XY_3; X=Ge, Sn and Y= I, Br, Cl] Organo-Metal Halide Perovskite Solar Cells

RESEARCH GRANTS SECURED

1. **PROJECT-1**: "Synthesis and characterization of nanoparticles/superconductor composites" Rs. 500,000/=
2. **PROJECT-2**: "Study of magnetic nanostructure-CuTl-1223 superconductor composites" IIUI project amounting Rs. 490,000/=.
3. **PROJECT-3**: "Combination Analysis of Natural Phenolics and Palladium Nanoparticles Targeting Histone Deacetylases (HDACs): An Attractive Combinatorial Therapy for Breast Cancer Cells" NRPU of HEC Pakistan amounting Rs.1591747/=.

HONORS AND AWARDS

- University Merit scholarship in M. Phil.
- University Merit scholarship in Ph. D.
- International Young Scientist Fellow (Post Doc) Award at Institute of Physics (IOP) Chinese Academy of Sciences (CAS) Beijing, R. China
- Research Productivity Award by the Pakistan Council for Science and Technology every year since 2009. Pakistan Council for Science & Technology (PCST) grants Research Productivity

Award to active scientists on the basis of their publications in International Journals and their performance as evaluated empirically by Journal Impact Factors, Citations and Peer Review.

- Best University Teacher Award and Gold Medal for year 2017 from IIU Islamabad, Pakistan.
- Visiting Scientist at Center for Nanoscience (William Clay building), Department of Physics and Astronomy, University of Missouri St. Louis, USA.

SKILLS

- Strong knowledge and research experience in high T_c superconductivity in bulk form as well as in thin films and superconductor/nanostructures composites.
- Strong background of Physics especially related to transport phenomena in different materials.
- Familiar with XRD, XPS, FT-IR, SEM, TEM, AFM, Raman Spectroscopy techniques etc.
- Excellent writing and communication skills.

REFERENCES

1. **Prof. Dr. Nawazish Ali Khan**
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   Physics and Astronomy, University of Missouri, St. Louis**, USA.**
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LIST OF INTERNATIONAL PUBLICATIONS

(Total Impact Factor = 495.803)
(Q1 = 67, Q2 = 53, Q3 = 24, and Q4 = 7)

1. Nawazish A. Khan, **M. Mumtaz**, K. Sabeeh, M. I. A. Khan, and. Mushtaq Ahmad, "The study of phonon modes of $Cu_{1-x}Tl_xBa_2Ca_3Cu_4O_{12-y}$ superconductor thin films by FTIR absorption spectroscopy", Physica C **407** (2004) 103-114. **(I. F. = 1.534). W 0921-4534 (Q2)**
2. Nawazish A. Khan, and **M. Mumtaz,** "A New $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-y}Zn_yO_{10-\delta}$ high-temperature superconductor with three ZnO_2 planes", Supercond. Sci. Technol. **19** (2006) 762-766**. (I. F. = 3.482). W 0953-2048,1361-6668 (Q1)**
3. Nawazish A. Khan, **M. Mumtaz,** M. M. Ahadian, and Azam Iraji-zad, "X-ray photo-emission studies of $Cu_{1-x}Tl_xBa_2Ca_3Cu_4O_{12-y}$ superconductor thin films", Physica C **449** (2006) 47-52. **(I. F. = 1.534). W 0921-4534 (Q2)**
4. Nawazish A. Khan, **M. Mumtaz,** M. M. Ahadian, and Azam Iraji-zad, "X-ray photoemission studies of Zn doped $Cu_{1-x}Tl_xBa_2Ca_3Cu_{3-y}Zn_yO_{10-\delta}$ (y = 0, 2.65) superconductors", Physica C **453** (2007) 46-51. **(I. F. = 1.534). W 0921-4534 (Q2)**
5. Nawazish A. Khan, and **M. Mumtaz,** "Absence of pair breaking effect in $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-y}Zn_yO_{10-\delta}$ (y=0, 0.75, 1.5, 2.25, 2.5, 2.65) superconductor", Eur. Phys. J. Appl. Phys. **38** (2007) 47-51. **(I. F. = 1.168). (Q3)**
6. A. A. Khurram**, M. Mumtaz,** Nawazish A. Khan, M. M. Ahadian, and Azam Iraji-zad, "The effect of grain size on the fluctuation-induced conductivity of $Cu_{1-x}\ Tl_x\ Ba_2\ Ca_3\ Cu_4\ O_{12-y}$ superconductor thin films", Supercond. Sci. Technol. **20** (2007) 742-747. **(I. F. = 3.842). W 0953-2048,1361-6668 (Q1)**
7. Nawazish A. Khan, and **M. Mumtaz,** "$Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_{4-y}Zn_yO_{12-\delta}$ (y=0, 1.0, 2.0, 3.0, 3.5): Superconductor with four ZnO_2 planes", J. Low Temp. Phys. **149** (2007) 97-103. **(I. F. = 1.618). X 1573-7357 (Q2)**
8. **M. Mumtaz,** and Nawazish A. Khan, "Intergranular coupling of the $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{0.5}Zn_{2.5}O_{10-\delta}$ superconductor", Supercond. Sci. Technol. **20** (2007) 1228-1232. **(I. F. = 3.842). W 0953-2048,1361-6668 (Q1)**
9. Nawazish A. Khan, and **M. Mumtaz,** "Enhanced superconductivity by Mg doping in $Cu_{1-x}Tl_xBa_2Ca_{2-y}Mg_y\ Cu_{0.5}Zn_{2.5}O_{10-\delta}$", Mater. Lett. **62** (2008) 659-662. **(I. F. = 3.574). W 0167-577X (Q1)**
10. Nawazish A. Khan, **M. Mumtaz,** and A. A. Khurram, "AC-susceptibility measurements of $Cu_{1-x}Tl_xBa_2Ca_3Cu_4O_{12}$-y superconductor thin films with different thallium content", Physica C **468** (2008) 233–236. **(I. F. = 1.534). W 0921-4534 (Q2)**
11. Nawazish A. Khan, and **M. Mumtaz,** "How Grain-Boundaries Influence the Intergranular Critical Current Density of $Cu_{1-x}Tl_xBa_2Ca_3Cu_4O_{12-\delta}$ Superconductor Thin Films?", J. Low Temp. Phys. **151** (2008) 1221-1229**. (I. F. = 1.618). X 1573-7357 (Q2)**
12. Nawazish A. Khan, and **M. Mumtaz,** "Absence of pair-breaking mechanism in $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_{0.5}Zn_{3.5}O_{12-\delta}$", Phys. Rev. B **77** (2008) 054507. **(I. F. = 3.908). W 2469-9950 (Q1)**

13. **M. Mumtaz,** and Nawazish A. Khan, "Studies of phonon modes and superconducting properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_{4-y}Zn_yO_{12-\delta}$ (y=0, 1.5, 2.5)", Supercond. Sci. Technol. **21** (2008) 065015. **(I. F. = 3.482). W 0953-2048,1361-6668 (Q1)**
14. **M. Mumtaz,** and Nawazish A. Khan, "Improved interplane and intergranular coupling by Mg doping at Ca site in $Cu_{0.5}Tl_{0.5}Ba_2Ca_2(Cu_{0.5}Zn_{2.5})O_{10-\delta}$ superconductor", J. Appl. Phys. **103** (2008) 083913. **(I. F. = 2.877). W 1089-7550 (Q1)**
15. **M. Mumtaz,** Nawazish A. Khan, and A. A. Khurram, "Enhanced superconducting properties of $Cu_{0.5}(Tl_{0.5-y}Hg_y)Ba_2Ca_3Cu_4O_{12-\delta}$ (y=0, 0.15, 0.25, 0.35) superconductor", J. Alloys Compd. **452** (2008) 435-455. **(I. F. = 6.371). W 0925-8388 (Q1)**
16. **M. Mumtaz,** and A. A. Khurram, **"**Inter-grain connectivity in $Cu_{0.5}(Tl_{0.5-y}Hg_y)Ba_2Ca_3Cu_4O_{12-\delta}$ superconductor", J. Alloys Compd. **463** (2008) 591-595. **(I. F. = 6.371). W 0925-8388 (Q1)**
17. Nawazish A. Khan, Faheem Ashraf, **M. Mumtaz,** and Naghma Haider, "Self-doping Effects on the Superconducting Properties of $Cu_{0.5}Tl_{0.25}M_{0.25}Ba_2Ca_2Cu_3O_{10-\delta}$ (M = Bi, Hg, Nb, Pd, Li, Na, K)", J. Supercond. Nov. Magn. **21** (2008) 279-287. **(I. F. = 1.675). X 1557-1947 (Q3)**
18. Nawazish A. Khan, **M. Mumtaz,** and A. A. Khurram, "Frequency dependent dielectric properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2(Cu_{3-y}Zn_y)O_{10-\delta}$ (y=0, 1.0, 1.5, 2.0, 2.5) superconductors", J. Appl. Phys. **104** (2008) 033916. **(I. F. = 2.877). W 1089-7550 (Q1)**
19. **M. Mumtaz,** and Nawazish A. Khan**,** **"**Dielectric response of $Cu_{0.5}Tl_{0.5}Ba_2(Ca_{2-y}Mg_y)(Cu_{0.5}Zn_{2.5})O_{10-\delta}$ bulk superconductor to frequency and temperature", Physica C **469** (2009) 182-187. **(I. F. = 1.534). W 0921-4534 (Q2)**
20. A. A. Khurram, Nawazish A. Khan, and **M. Mumtaz,** "Intercomparison of Fluctuation Induced Conductivity of $Cu_{0.5}Tl_{0.5}Ba_2Ca_{n-1}Cu_nO_{2n+4-y}$ (n=2, 3, 4) superconductor thin films", Physica C **469** (2009) 279-282. **(I. F. = 1.534). W 0921-4534 (Q2)**
21. **M. Mumtaz,** and Nawazish A. Khan, "Dielectric properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_4O_{12-\delta}$ bulk superconductors", Physica C **469** (2009) 728-731. **(I. F. = 1.534). W 0921-4534 (Q2)**
22. **M. Mumtaz,** and Nawazish A. Khan**,** **"**Reduced anti-ferromagnetism promoted by Zn $3d^{10}$ substitution at CuO_2 planar sites of $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_4O_{12-\delta}$ superconductors", Physica B: Condensed Matter **404** (2009) 3973-3977. **(I. F. = 2.988). W 0921-4526 (Q2)**
23. **M. Mumtaz,** and Nawazish A. Khan, **"**Improvement of superconductivity with the reduced anti-ferromagnetism in Zn-doped CuTl-1223 superconductors", Phys. Scr. **80** (2009) 025702. **(I. F. = 3.081). W 0031-8949 (Q2)**
24. **M. Mumtaz,** and Nawazish A. Khan, "Homogeneous distribution of carriers in the conducting planes by Zn substitution at Cu sites in $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_4O_{12-\delta}$ superconductors", Low Temperature Physics/Fizika Nizkikh Temperature, **36 (**2010) 196-201. **(I. F. = 0.923). X 1063-777X / Y 0132-6414 (Q4)**
25. **M. Mumtaz,** Nawazish A. Khan, and R. Nawaz, "Superconductivity and electron-phonon interaction in $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-y}M_yO_{10-\delta}$ (M=0, Si, Ge, Sn, y=0, 1)", J. Supercond. Nov. Mag. **23** (2010) 565-569. **(I. F. = 1.675). X 1557-1947 (Q3)**
26. **M. Mumtaz,** Nawazish A. Khan and E. U. Khan, "Growth of $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_{4-y}Zn_yO_{12-\delta}$ (y=0, 1, 1.5, 2, 2.5) superconductor with optimum carriers", Physica C **470** (2010) 428- 434. **(I. F. = 1.534). W 0921-4534 (Q2)**

27. **M. Mumtaz,** Nawazish A. Khan and Sajid Khan, "Optimization of carriers by self-doping in $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-y}M_yO_{10-\delta}$ superconductor", J. Appl. Phys, **107** (2010) 103905. **(I. F. = 2.877). W 1089-7550 (Q1)**
28. Nawazish A. Khan, **M. Mumtaz,** Anayat Ullah, Najmul Hassan and A. A. Khurram, "Suppression of T_c in Co-doped $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-x}Co_xO_{10-\delta}$ superconductor", J. Alloys Compd. **507** (2010) 142-145. **(I. F. = 6.371). W 0925-8388 (Q1)**
29. **M. Mumtaz,** Nawazish A. Khan and Faheem Ashraf, "Enhanced superconductivity in $(Cu_{0.5}Tl_{0.25}M_{0.25})Ba_2Ca_2Cu_3O_{10-\delta}$ samples", J. Supercond. Nov. Magn. **24** (2011) 1547-1551. **(I. F. = 1.675). X 1557-1947 (Q3)**
30. S. M. Hasnain, **M. Mumtaz** and Nawazish A. Khan, "Optimum Synthesis Temperature of $(Cu_{1-x}Tl_x)Ba_2Ca_3Cu_4O_{12-\delta}$ Superconductor", J. Supercond. Nov. Magn. **24** (2011) 1653-1657. **(I. F. = 1.675). X 1557-1947 (Q3)**
31. **M. Mumtaz,** Nawazish A. Khan and Anayat Ullah, "Superconductivity in Co and Li substituted $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_{3-x}Co_xO_{10-\delta}$", J. Low. Temp. Phys. **163** (2011) 203-213. **(I. F. = 1.618). X 1573-7357 (Q2)**
32. **M. Mumtaz,** S. M. Hasnain, A. A. Khurram and Nawazish A. Khan, "Fluctuation induced conductivity in $(Cu_{0.5}Tl_{0.5-x}K_x)Ba_2Ca_3Cu_4O_{12-\delta}$ superconductor", J. Appl. Phys, **109** (2011) 023906. **(I. F. = 2.877). W 1089-7550 (Q1)**
33. **M. Mumtaz,** Nawazish A. Khan, S. M. Hasnain and Adnan Younis, "Role of Mobile Charge Carriers and Fluctuation Induced Conductivity in $(Cu_{0.5}Tl_{0.5-x}K_x)Ba_2Ca_3Cu_1Zn_3O_{12-\delta}$ Superconductor", J. Supercond. Nov. Magn. **24** (2011) 1939-1945. **(I. F. = 1.675). X 1557-1947 (Q3)**
34. **M. Mumtaz,** Nawazish A. Khan, Faheem Ashraf, "Improvement of Superconductivity with the Modification of Charge Reservoir Layer in $(Cu_{0.5}Tl_{0.5-x}M_x)Ba_2Ca_2Cu_3O_{10-\delta}$" J. Supercond. Nov. Magn. **24** (2011) 1985-1989. **(I. F. = 1.675). X 1557-1947 (Q3)**
35. **M. Mumtaz,** S. M. Hasnain, and Nawazish A. Khan, "Fluctuation induced conductivity in Hg-doped $(Cu_{0.5}Tl_{0.5-x}Hg_x)Ba_2Ca_3Cu_4O_{12-\delta}$ superconductor" J. Supercond. Nov. Magn. **25** (2012) 201-207. **(I. F. = 1.675). X 1557-1947 (Q3)**
36. S. M. Hasnain, **M. Mumtaz,** and Nawazish A. Khan, "Comparison of superconductivity parameters of $(Cu_{1-x}Tl_x)Ba_2Ca_4Cu_5O_{14-\delta}$ superconductor synthesized at different temperatures" J. Supercond. Nov. Magn. **25** (2012) 325-329. **(I. F. = 1.675). X 1557-1947 (Q3)**
37. S. M. Hasnain, **M. Mumtaz,** and Nawazish A. Khan, "Fluctuation induced conductivity in $(Cu_{1-x}Tl_x)Ba_2Ca_2Cu_3O_{10-\delta}$ superconductor" J. Low. Temp. Phys. **167** (2012) 74–82. **(I. F. = 1.618). X 1573-7357 (Q2)**
38. **M. Mumtaz,** Nawazish A. Khan, and Sajid Khan, "Frequency dependent dielectric properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2(Cu_{3-y}M_y)O_{10-\delta}$ superconductor" J. Appl. Phys, **111** (2012) 013920. **(I. F. = 2.877). W 1089-7550 (Q1)**
39. **M. Mumtaz,** Nawazish A. Khan, and S. M. Hasnain, "Growth of $(Cu_{0.5}Tl_{0.5-x}Hg_x)Ba_2Ca_3Cu_4O_{12-\delta}$ superconductor with optimum carriers density in CuO_2 planes and fluctuation induced conductivity" J. Supercond. Nov. Magn. **25** (2012) 835-840. **(I. F. = 1.675). X 1557-1947 (Q3)**
40. Nawazish A. Khan, M. Rahim, and **M. Mumtaz,** "Critical regime and suppression of the pseudo-gap in $Cu_{0.5}Tl_{0.5}Ba_2Ca_3Cu_{4-y}Zn_yO_{12-\delta}$ superconductor via excess conductivity analysis" Physica C **478** (2012) 32-37. **(I. F. = 1.534). W 0921-4534 (Q2)**

41. **M. Mumtaz,** Nawazish A. Khan, S. M. Hasnain, and Faheem Ashraf, "Superconductivity and Fluctuation-Induced Conductivity (FIC) Analysis of $(Cu_{0.5}Tl_{0.5-x}M_x)Ba_2Ca_2Cu_3O_{10-\delta}$" J. Supercond. Nov. Mag. **25** (2012) 2291-2295. **(I. F. = 1.675). X 1557-1947 (Q3)**
42. Nawazish A. Khan, Yusra Arif, **M. Mumtaz,** and A. A. Khurram, "Comparison of the superconducting properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2(Cu_{3-y}Zn_y)O_{10-\delta}$ prepared at different synthesis temperatures" Ceramics International **38** (2012) 6417-6422. **(I. F. = 5.532). W 0272-8842 (Q1)**
43. Nawazish A. Khan, M. Zubair, **M. Mumtaz,** and A. A. Khurram, "Atmospheric Pressure synthesis of Be- and Mg-doped $TlBa_2Ca_2Cu_3O_{10-\delta}$ superconductor" Ceramics International **39** (2013) 1901-1908. **(I. F. = 5.532). W 0272-8842 (Q1)**
44. **M. Mumtaz,** Asif I. Bhatti, K. Nadeem, Nawazish A. Khan, Abida Saleem, and S. Tajammul Hussain, "Study of CuO nano-particles/CuTl-1223 superconductor composite" J. Low. Temp. Phys. **170** (2013) 185-204. **(I. F. = 1.618). X 1573-7357 (Q2)**
45. S. Rahman, K. Nadeem, M. Anis-ur-Rehman, **M. Mumtaz,** S. Naeem, I. Letofsky-Papst, "Structural and magnetic properties of ZnMg-ferrite nanoparticles prepared using the co-precipitation method", Ceramics International **39** (2013) 5235–5239. **(I. F. = 5.532). W 0272-8842 (Q1)**
46. **M. Mumtaz,** Nawazish A. Khan, and Sajid Khan, "Study of dielectric properties of oxygen post-annealed $Cu_{0.5}Tl_{0.5}Ba_2Ca_2(Cu_{3-y}M_y)O_{10-\delta}$ superconductor" IEEE Trans. Appl. Supercond. **23** (2013) 8800108. **(I. F. = 1.949). X 1051-8223 (Q2)**
47. Khurram Shehzad, Asad Ul-Haq, Shahabaz Ahmad, **Muhamamd Mumtaz,** Tajamal Hussain, Adnan Mujahid, Asma Tufail Shah, Muhammad Yasir Choudhry, Irshad Khokhar, Sadaf Ul-Hassan, Faisal Nawaz, Faiz ur Rahman, Yasir Butt, Muhammad Pervaiz, "All-organic PANI–DBSA/PVDF dielectric composites with unique electrical properties" J. Mater. Sci. **48** (2013) 3737-3744. **(I. F. = 4.682). W 1573-4803 (Q1)**
48. **M. Mumtaz,** M. Kamran, K. Nadeem, Abdul Jabbar, Nawazish A. Khan, Abida Saleem, S. Tajammul Hussain, and M. Kamran, "Dielectric properties of $(CuO, CaO_2, and BaO)_y$/CuTl-1223 composites" Low Temp. Phys./Fizika Nizkikh Temperatur **39** (2013) 806-813. **(I. F. = 0.923). X 1063-777X / Y 0132-6414 (Q4)**
49. M. Rahim, Nawazish A. Khan, **M. Mumtaz,** "Temperature and Frequency Dependent Dielectric Properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_3(Cu_{4-y}Cd_y)O_{12-\delta}$ Bulk Superconductor" J. Low. Temp. Phys. **172** (2013) 47-58. **(I. F. = 1.618). X 1573-7357 (Q2)**
50. **M. Mumtaz,** S. Naeem, K. Nadeem, F. Naeem, Abdul Jabbar, Y. R. Zheng, Nawazish A. Khan, and M. Imran, "Study of nano-sized $ZnFe_2O_4$ particles/CuTl-1223 superconductor composites" Solid State Sciences **22** (2013) 21-26. **(I. F. = 3.752). X 1293-2558 (Q2)**
51. **M. Mumtaz,** and Nawazish A. Khan, "Excess Conductivity in $Cu_{0.5}Tl_{0.5}Ba_2(Ca_{2-y}Mg_y)(Cu_{0.5}Zn_{2.5})O_{10-\delta}$ Superconductor" Ceramics International **39** (2013) 7787-7792. **(I. F. = 5.532). W 0272-8842 (Q1)**
52. **M. Mumtaz,** Nawazish A. Khan, and Saleem Abbas, "Superconductivity in Y-doped $(Tl_{1-x}Y_x)Ba_2Ca_2Cu_3O_{10-\delta}$" Scripta Materialia **69** (2013) 517-520. **(I. F. = 6.302). W 1359-6462 (Q1)**
53. **M. Mumtaz,** M. Rahim, Nawazish A. Khan, K. Nadeem, and Khurram Shehzad, "Dielectric properties of oxygen post-annealed $Cu_{0.5}Tl_{0.5}Ba_2Ca_3(Cu_{4-y}Cd_y)O_{12-\delta}$ bulk superconductor" Ceramics International **39** (2013) 9591-9598. **(I. F. = 5.532). W 0272-8842 (Q1)**

54. A. A. Khurram, Faisal Jabar, **M. Mumtaz,** Nawazish A. Khan, M. Nasir Mehmood "Effect of light, medium and heavy ion irradiations on the structural and electrical properties of ZnSe thin films" Nuclear Instruments and Methods in Physics Research B: Beam Interactions with Materials and Atoms **313 (**2013) 40-44. **(I. F. = 1.274). X 0168-583X (Q3)**

55. K. Nadeem, H. Krenn, W. Sarwar, and **M. Mumtaz,** "Comparison of surface effects in SiO_2 coated and uncoated nickel ferrite nanoparticles" Appl. Surface Science **288** (2014) 677-681. **(I. F. = 7.392). W 0169-4332 (Q1)**

56. **M. Mumtaz,** Nawazish A. Khan, Saleem Abbas, and Khurram Shehzad**, "**Suppression of 3D mobility of carrier and superconductivity by Y^{+3} substitution in $Cu_{0.5}Tl_{0.5}Ba_2(Ca_{2-x}Y_x)Cu_3O_{10-\delta}$ samples" Ceramics International **40** (2014) 4187-4191**. (I. F. = 5.532). W 0272-8842 (Q1)**

57. **M. Mumtaz,** M. Zubair, Nawazish A. Khan, and Saleem Abbas, "Excess conductivity analysis and infrared absorption spectroscopy of Mg-doped $TlBa_2Ca_2Cu_3O_{10-\delta}$ superconductor" Low Temp. Phys./Fizika Nizkikh Temperatur **40** (2014) 199-205/ 259-266. **(I. F. = 0.923). X 1063-777X / Y 0132-6414 (Q4)**

58. **M. Mumtaz,** M. Zubair, Nawazish A. Khan, and K. Nadeem, "Infrared absorption spectroscopy and fluctuations induced conductivity (FIC) analysis of Be-doped $TlBa_2Ca_2Cu_3O_{10-\delta}$ superconductor" Ceramics International, **40** (2014) 6655–6662. **(I. F. = 5.532). W 0272-8842 (Q1)**

59. K. Nadeem, F. Zeb, M. Azeem Abid, **M. Mumtaz,** and M. Anis ur Rehman, "Effect of amorphous silica matrix on structural, magnetic, and dielectric properties of cobalt ferrite/silica nanocomposites" J. Non-Crystalline Solids **400** (2014) 45–50. **(I. F. = 4.458). W 0022-3093 (Q1)**

60. Abdul Jabbar, Irfan Qasim, **M. Mumtaz,** M. Zubair, K. Nadeem, and A. A. Khurram, "Suppression of activation energy and superconductivity by the addition of Al_2O_3 nanoparticles in CuTl-1223 matrix" J. Appl. Phys. **115** (2014) 203904. **(I. F. = 2.877). W 1089-7550 (Q1)**

61. K. Nadeem, M. Shahid, and **M. Mumtaz,** "Competing crystallite size and zinc concentration in silica coated cobalt ferrite nanoparticles" Progress in Natural Science: Materials International **24** (2014) 199-204. **(I. F. = 4.269). W 1002-0071 (Q1)**

62. K. Nadeem, F. Naeem, **M. Mumtaz,** S. Naeem, Abdul Jabbar, Irfan Qasim and Nawazish A. Khan, "Synthesis and characterization of core-shell Ni/NiO nanoparticles/CuTl-1223 superconductor composites" Ceramics International **40** (2014) 13819–13825. **(I. F. = 5.532). W 0272-8842 (Q1)**

63. Khurram Shehzad, Mirza Nadeem Ahmad, Tajamal Hussain, **Muhammad Mumtaz,** Asma Tufail Shah, Adnan Mujahid, Chao Wang, Josef Ellingsen, Zhi-Min Dang, "Influence of carbon nanotube dimensions on the percolation characteristics of carbon nanotube/polymer composites" J. Appl. Phys. **116** (2014) 064908. **(I. F. = 2.877). W 1089-7550 (Q1)**

64. K. Nadeem, L. Ali, I. Gul, Syed Rizwan, and **M. Mumtaz,** "Effect of the silica coating on the structural, dielectric, and magnetic properties of maghemite nanoparticles" J. Non-Crystalline Solids, **404** (2014) 72–77. **(I. F. = 4.458). W 0022-3093 (Q1)**

65. Ghulam Hussain, Abdul Jabbar, Irfan Qasim**,** **M. Mumtaz,** K. Nadeem, M. Zubair, S. Qamar Abbas, and A. A. Khurram, "Activation energy and excess conductivity analysis of (Ag)x/CuTl-1223 nano-superconductor composites" J. Appl. Phys. **116** (2014) 103911. **(I. F. = 2.877). W 1089-7550 (Q1)**

66. Abdul Jabbar, Irfan Qasim, Khalid M. Khan, Zulqurnain Ali, K. Nadeem, and **M. Mumtaz,** "Synthesis and superconducting properties of $(Au)_x$/CuTl-1223 composites" J. Alloys Compd. **618** (2015) 110–114. **(I. F. = 6.371). W 0925-8388 (Q1)**

67. Shakil Ahmad, Nawazish A. Khan, A. A. Khurram, and **M. Mumtaz,** "Excess conductivity analysis of heavy ions irradiated $TlBa_2(Ca_{2-y}Mg_y)Cu_3O_{10-\delta}$ superconductor" Physica B: Condensed Matter **457** (2015) 113–116. **(I. F. = 2.988). W 0921-4526 (Q2)**

68. Abdul Jabbar, Irfan Qasim, Shahid A. Khan, K. Nadeem, M. Waqee-ur-Rehman, **M. Mumtaz,** and F. Zeb, "Highly coercive $CoFe_2O_4$ nanoparticles-CuTl-1223 superconductor composites" Journal of Magnetism and Magnetic Materials **377** (2015) 6-11. **(I. F. = 3.097). W 0304-8853 (Q1)**

69. Abdul Jabbar, Irfan Qasim, M. Waqee-ur-Rehman, K. Nadeem, and **M. Mumtaz,** "Structural and superconducting properties of $(Al_2O_3)_y$/CuTl-1223 composites" J. Electronics Materials **44,** (2015) 110-116. **(I. F. = 2.047). W 0361-5235, 1543-186X (Q2)**

70. Abdul Jabbar**, M. Mumtaz,** and K. Nadeem, "Noble metals (Ag, Au) nanoparticles addition effects on superconducting properties of CuTl-1223 phase" Eur. Phys. J. Appl. Phys. **69** (2015) 30601. **(I. F. = 1.168). (Q4)**

71. Shakil Ahmad, Nawazish A. Khan, and **M. Mumtaz** A. A. Khurram, "Irradiation hardening of Mg-doped $TlBa_2(Ca_{2-y}Mg_y)Cu_3O_{10-\delta}$ superconductors" Radiation Physics and Chemistry **112** (2015) 145–150. **(I. F. = 2.776). W 0969-806X (Q2)**

72. K. Nadeem, S. Rahman, and **M. Mumtaz,** "Effect of annealing on properties of Mg doped Zn-ferrite nanoparticles" Progress in Natural Science: Materials International **25** (2015) 111-116. **(I. F. = 4.269). W 1002-0071 (Q1)**

73. **M. Mumtaz,** S. K. He, X. G. Qiu, M. Kamran, "Josephson junctions like behavior in superconducting Nb films with diluted triangular arrays of antidots" Acta Physica Polonica A, **127** (2015) 898-900. **(I. F. = 0.857). (Q3)**

74. M. Waqee-Ur-Rehman, Irfan Qasim, **M. Mumtaz,** K. Nadeem, and A. A. Khurram, Infield response of $(Al_2O_3)_x$/CuTl-1223 nanoparticles-superconductor composites, Physica B: Condensed Matter **476** (2015) 37–40. **(I. F. = 2.988). W 0921-4526 (Q2)**

75. Abdul Jabbar, Irfan Qasim, **M. Mumtaz,** and K. Nadeem, "Synthesis and superconductivity of $(Ag)_x$/CuTl-1223 composites" Progress in Natural Science: Materials International **25** (2015) 204–208. **(I. F. = 4.2698. W 1002-0071 (Q1)**

76. Irfan Qasim, M. Waqee-ur-Rehman, **M. Mumtaz,** Ghulam Hussain, K. Nadeem, and Nawazish A. Khan, "Role of anti-ferromagnetic Cr nanoparticles in CuTl-1223 superconducting matrix" J. Alloys Compd. **649** (2015) 320-326.**(I. F. = 6.371). W 0925-8388 (Q1)**

77. Nawazish A. Khan, M. Aftab Rafique, and **M. Mumtaz,** and G. Hussain, "Investigation on critical regime of $Cu_{0.5}Tl_{0.5}Ba_2(Ca_{2-x}Be_x)(Cu_2Ti)O_{10-\delta}$ superconductor via excess conductivity analysis" J. Supercond. Nov. Mag. **28** (2015) 3243–3248. **(I. F. = 1.675). X 1557-1947 (Q3)**

78. K. Nadeem, G. Hussain, **M. Mumtaz,** A. Haider, and S. Ahmed, "Role of magnetic $NiFe_2O_4$ nanoparticles in CuTl-1223 superconductor" Ceramics International, **41** (2015) 15041-15047. **(I. F. = 5.532). W 0272-8842 (Q1)**

79. **M. Mumtaz,** Ghulam Hussain, M. W. Rabbani, M. Waqee-Ur-Rehman, Irfan Qasim, Abdul Jabbar, and Nawazish A. Khan, "Infield superconductivity of carbon nanotubes-

$Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ superconductor composites" AIP Advances **5** (2015) 107148. **(I. F. = 1.579). X 2158-3226 (Q2)**

80. Khurram Shehzad, Ayaz Ali Hakro, You Zeng, Shang-Hong Yao, Yi Xiao-Hong, **Muhammad Mumtaz,** Kashif Nadeem, Nasir Said Khisro, Zhi-Min Dang "Two percolation thresholds and remarkably high dielectric permittivity in pristine carbon nanotube/elastomer composites" Applied Nanoscience **5** (2015) 969–974. **(I. F. = 3.869). W 2190-5517/ 2190-5509 (Q1)**

81. Irfan Qasim, M. Waqee-Ur-Rehman, **M. Mumtaz,** and K. Nadeem**, "**Role of Co nanoparticles in CuTl-1223 superconductor" Ceramics International **42** (2016) 1122–1127. **(I. F. = 5.532). W 0272-8842 (Q1)**

82. M. Waqee-Ur-Rehman, Irfan Qasim, **M. Mumtaz,** K. Nadeem, and S. Qamar, "Resistive transition and flux flow mechanism in $CoFe_2O_4$ nanoparticles added $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ superconductor" J. Alloys Compd. **657** (2016) 348–352. **(I. F. = 6.371). W 0925-8388 (Q1)**

83. Irfan Qasim, M. Waqee-Ur-Rehman, **M. Mumtaz,** Ghulam Hussain, K. Nadeem, and Khurram Shehzad, "Ferromagnetic (Ni) nanoparticles-CuTl-1223 superconductor composites" Journal of Magnetism and Magnetic Materials **403** (2016) 60-67. **(I. F. = 3.097). W 0304-8853 (Q1)**

84. M. Waqee-Ur-Rehman, **M. Mumtaz,** Irfan Qasim, and K. Nadeem**, "**Infield response of $(Co)_x$/CuTl-1223 nanoparticles-superconductor composites" Cryogenics **73** (2016) 68-72. **(I. F. = 2.134). W 0011-2275, 1879-2235 (Q2)**

85. M. Waqee-Ur-Rehman, **M. Mumtaz,** Irfan Qasim, and K. Nadeem, "Infield superconducting properties of Ni nanoparticles added CuTl-1223 phase" Solid State Communications **228** (2016) 32-35. **(I. F. = 1.934). X 0038-1098 (Q2)**

86. F. Zeb, A. R. Qureshi, K. Nadeem, **M. Mumtaz,** and H. Krenn, "Surface effects in uncoated and amorphous SiO_2 coated cobalt ferrite nanoparticles" J. Non-Crystalline Solids, **435** (2016), 69-75. **(I. F. = 4.458). W 0022-3093 (Q1)**

87. F. Zeb, W. Sarwer, K. Nadeem, M. Kamran, **M. Mumtaz**, H. Krenn, and I. Letofsky-Papst "Surface spin-glass in cobalt ferrite nanoparticles dispersed in silica matrix" Journal of Magnetism and Magnetic Materials **407** (2016) 241–246. **(I. F. = 3.097). W 0304-8853 (Q1)**

88. **M. Mumtaz,** Liaqat Ali, M. Nasir Khan, and M. Usman Sajid, "Tuning of Dielectric Parameters of $(NiFe_2O_4)_x$/CuTl-1223 Nano-superconductor Composites by Temperature and Frequency" J. Supercond. Nov. Magn. **29** (2016) 1181–1186. **(I. F. = 1.675). X 1557-1947 (Q3)**

89. **M. Mumtaz,** Liaqat Ali, Abdul Jabbar, M.W. Rabbani, M. Naveed, M. Imran, Badshah Amin, M. Nasir Khan, and M. Usman Sajidb, "Tuning of dielectric properties of $(ZnO)_x$-CuTl-1223 nanoparticles-superconductor composites", Ceramics International **42** (2016) 11193-11200. **(I. F. = 5.532). W 0272-8842 (Q1)**

90. Irfan Qasim, **M. Mumtaz,** K. Nadeem, and S. Qamar Abbas, "Zinc Nanoparticles at Intercrystallite Sites of $(Cu_{0.5}Tl_{0.5})Ba_2Ca_3Cu_4O_{12-\delta}$ Superconductor" Journal of Nanomaterials **2016** (2016) 6 **(I. F. = 3.791). X 1687-4129, 1687-4110 (Q2)**

91. K. Nadeem, Asmat Ullah, M. Mushtaq, M. Kamran, S. S. Hussain, and **M. Mumtaz** "Effect of air annealing on structural and magnetic properties of Ni/NiO nanoparticles" Journal of Magnetism and Magnetic Materials **417** (2016) 6-10. **(I. F. = 3.097). W 0304-8853 (Q1)**

92. **M. Mumtaz,** Liaqat Ali, Shoaib Azeem, Saad Ullah, G. Hussain, M. W. Rabbani, Abdul Jabbar, and K. Nadeem, "Dielectric properties of $(Zn)_x$/CuTl-1223 nanoparticles-superconductor composites" Journal of Advanced Ceramics **5**(2) (2016) 159-166. **(I. F. = 11.534). X 2227-8508, 2226-4108 (Q1)**

93. M. Waqee-Ur-Rehman, **M. Mumtaz,** Irfan Qasim, and K. Nadeem, "Flux pinning by Cr nanoparticles in $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ superconductor" J. Low. Temp. Phys. **184** (2016) 997-1006. **(I. F. = 1.618). X 1573-7357 (Q2)**

94. Abid Ali, Khurram Shehzad, Faiz Ur-Rahman, Syed Mujtaba Shah, Muhammad Khurram, **Muhammad Mumtaz,** and Rizwan Ur Rehman Sagar, "Flexible, Low Cost, and Platinum-Free Counter Electrode for Efficient Dye-Sensitized Solar Cells" ACS Appl. Mater. Interfaces, **8** (38) (2016) 25353–25360. **(I. F. = 10.383). W 1944-8252, 1944-8244 (Q1)**

95. Liaqat Ali, **M. Mumtaz,** and M. W. Rabbani, "Flux pinning with addition of Gold nanoparticles in CuTl-1223 superconductor" J. Supercond. Nov. Magn. **30** (2017) 325-329. **(I. F. = 1.675). X 1557-1947 (Q3)**

96. **M. Mumtaz,** Liaqat Ali, M. Waqee-ur-Rehman, K. Nadeem, G. Hussain, G. Abbas, and Bilal Majeed, "Improvement in Superconducting Properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Phase by Addition of γ-Fe_2O_3 Nanoparticles" J. Supercond. Nov. Magn. **30** (2017) 2741-2749. **(I. F. = 1.675). X 1557-1947 (Q3)**

97. Muhammad Zarrar Khan, Iftikhar Hussain Gul, Humaira Anwar, Shahid Ameer, Ahmad Nawaz Khan, Aqeel Ahsan Khurram, Kashif Nadeem, and **Muhammad Mumtaz,** "Massive dielectric properties enhancement of MWCNTs/$CoFe_2O_4$ nanohybrid for supercapacitor applications" Journal of Magnetism and Magnetic Materials, **424** (2017) 382–387. **(I. F. = 3.097). W 0304-8853 (Q1)**

98. Rashid Khan, **M. Mumtaz,** "Superconducting Properties of $(MnFe_2O_4)_x$/CuTl-1223 Composites" J. Nanotech. Material Sci. 4(1) (2017) 1- 5 **(I. F. = 0.454). (Q1)**

99. M. Naveed, **M. Mumtaz,** Rashid Khan, Abrar A. Khan, and M. Nasir Khan, "Conduction mechanism and impedance spectroscopy of $(MnFe_2O_4)_x$/CuTl-1223 nanoparticles-superconductor composites" Journal of Alloys and Compounds, 712 (2017) 696-703. **(I. F. = 6.371). W 0925-8388 (Q1)**

100. M. Kamran, K. Nadeem, **M. Mumtaz,** "Negative and anomalous T-dependent magnetization trend in $CoCr_2O_4$ nanoparticles" Solid State Sciences **72** (2017) 21-27. **(I. F. = 3.752). X 1293-2558 (Q2)**

101. **M. Mumtaz,** M. Waqee-Ur-Rehman, M.W. Rabbani, "Comparative study of ferromagnetic and anti-ferromagnetic nanoparticles as artificial flux pinning centers in CuTl-1223 superconductor" Ceramics International **43** (2017) 15842-15845. **(I. F. = 5.532). W 0272-8842 (Q1)**

102. M. W. Rabbani, Liaqat Ali, **M. Mumtaz,** Iftikhar Hussain Gul, "Infield superconducting properties of nano-sized Ag added $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$" Progress in Natural Science: Materials International **27** (2017) 487-490. **(I. F. = 4.269). W 1002-0071 (Q1)**

103. Liaqat Ali, **M. Mumtaz,** Irfan Ali, M. Waqee-Ur-Rehman, Abdul Jabbar, "Metallic Cu Nanoparticles Added $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Superconductor" J. Supercond. Nov. Magn. **31** (2018) 561–567. **(I. F. = 1.675). X 1557-1947 (Q3)**

104. **M. Mumtaz,** M. Naveed, Badshah Amin, M. Imran, M. Nasir Khan, "Temperature Dependent Impedance Spectroscopy of $(Co_3O_4)_x$/CuTl-1223 Nanoparticles-Superconductor Composites" Ceramics International **44** (2018) 4351-4359. **(I. F. = 5.532). W 0272-8842 (Q1)**

105. **M. Mumtaz,** Mirza Hassan Baig, M. Waqee-Ur-Rehman, and M. Nasir Khan, "Magneto-transport properties of Co_3O_4 nanoparticles added $(Cu_{0.5}Tl_{0.5})Ba_2Ca_2Cu_3O_{10-\delta}$ superconducting phase", Physica B: Condensed Matter **537** (2018) 283–289. **(I. F. = 2.988). W 0921-4526 (Q2)**

106. **M. Mumtaz,** Zafar Iqbal, M. Raza Hussain, Liaqat Ali, M. Waqee-ur-Rehman, and M. Saqib, "Study of $(DNPs)_x$/CuTl-1223 Nanoparticles-Superconductor Composites" J. Supercond. Nov. Magn. **31** (2018) 1315–1321. **(I. F. = 1.675). X 1557-1947 (Q3)**

107. **M. Mumtaz,** Liaqat Ali, and Iftikhar Ahmad, "Phase formation, activation energy and superconductivity of MgO nanoparticles added $(Cu_{0.5}Tl_{0.5})Ba_2Ca_2Cu_3O_{10-\delta}$ phase" Physica C **551** (2018) 19-24. **(I. F. = 1.534). W 0921-4534 (Q2)**

108. M. Imran, **M. Mumtaz,** M. Naveed, and M. Nasir Khan, "Role of Co_3O_4 Nanoparticles in Dielectric Properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Superconducting Phase" J. Low Temp. Phys. 192 (2018) 201-211. **(I. F. = 1.570). X 1573-7357 (Q2)**

109. **M. Mumtaz,** and Mian A. Asghar, "Dielectric Properties of Ferromagnetic Ni nanoparticles Added $(Cu_{0.5}Tl_{0.5})Ba_2Ca_2Cu_3O_{10-\delta}$ Superconducting Phase", Low Temp. Phys./Fizika Nizkikh Temperatur **44** (2018) N 8. **(I. F. = 0.923). X 1063-777X / Y 0132-6414 (Q4)**

110. **M. Mumtaz,** M. Naveed, Sheharyar Akhtar, M. Imran, and M. Nasir Khan, "Complex Electric Modulus Spectroscopy of $(MnFe_2O_4)_x$/CuTl-1223 Nanoparticles-Superconductor Composites", J. Supercond. Nov. Magn. **31** (2018) 2691–2698. **(I. F. = 1.675). X 1557-1947 (Q3)**

111. **M. Mumtaz,** M. Touqeer, and M. Nasir Khan, "Effects of $MnFe_2O_4$ Nanoparticles on Dielectric Properties of $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Superconducting Phase" J. Mater. Sci.: Mater. Electronics **29** (2018) 17341–17350. **(I. F. = 4.682). X 0957-4522, 1573-482X (Q2)**

112. **M. Mumtaz,** M. Naveed, L. Ali, Abrar A. Khan, M. Imran, M. Waqee-Ur-Rehaman, and M. Nasir Khan, "Magneto-transport properties of $(Cu)_x$/CuTl-1223 nanoparticles-superconductor composites" Cryogenics **95**, (2018) 5-10. **(I. F. = 2.134). W 0011-2275, 1879-2235 (Q2)**

113. K. Nadeem, M. Kamran, A. Javed, F. Zeb, S. S. Hussain, **M. Mumtaz,** H. Krenn, D. V. Szabo, U. Brossmann, and Xiaoke Mu "Role of surface spins on magnetization of Cr_2O_3 coated γ-Fe_2O_3 nanoparticles" Solid State Sciences **83** (2018) 43-48. **(I. F. = 3.752). X 1293-2558 (Q2)**

114. Mustehsin Ali, Usama Tehseen, M. Ali, L. Ali, and **M. Mumtaz,** "Study of uncoated and silica-coated hematite (α-Fe_2O_3) nanoparticles" Surfaces and Interfaces **13**, (2018) 196-204. **(I. F. = 6.137). X 2468-0230 (Q1)**

115. Y. Slimani, M. A. Almessiere, E. Hannachi, A. Baykal, A. Manikandan, **M. Mumtaz,** and F. Ben Azzouz, "Influence of WO_3 nanowires on structural, morphological and flux pinning ability of $YBa_2Cu_3O_y$ superconductor" Ceramics International **45** (2019) 2621–2628. **(I. F. = 5.532). W 0272-8842 (Q1)**

116. **M. Mumtaz,** Waqas Ahmad Khan, Liaqat Ali, M. Waqee-Ur-Rehman, and K. Nadeem, "Infield Superconductivity in Au Nanoparticles Added $Cu_{0.5}Tl_{0.5}Ba_2Ca_2Cu_3O_{10-\delta}$ Phase" Physica C **559** (2019) 21-24 **(I. F. = 1.534). W 0921-4534 (Q2)**

117. Irfan Qasim, Owais Ahmad, Muhammad Farooq Nasir, Muhammad Imran Malik, Qurat-ul-Ain Javed, Nawazish A. Khan, Asad Raza, **Muhammad Mumtaz,** and Muhammad Rashid, "Analysis of superconducting response and flux pinning ability of $(Mg_{0.8}Zn_{0.2}Fe_2O_4)_x$/CuTl-1223 composites" Mater. Res. Express **6** (2019) 046002 **(I. F. = 2.025). X 2053-1591 (Q2)**

118. Y. Slimani, M. A. Almessiere, Essia Hannachi, **M. Mumtaz,** A. Manikandan, A. Baykal, F. Ben Azzouz, "Improvement of flux pinning ability by tungsten oxide nanoparticles added in YBa_2Cu_3Oy superconductor" Ceramics International **45** (2019) 6828–6835 **(I. F. = 5.532). W 0272-8842 (Q1)**

119. Muhammad Mujahid, Rafi UllahKhan, **Muhammad Mumtaz,** Mubasher, Sumair Ahmed Soomro, and ShafiqUllah, "$NiFe_2O_4$Nanoparticles/MWCNTs Nanohybrid as Anode Material for

Lithium-ion Battery", Ceramics International **45** (2019) 8486-8493 **(I. F. = 5.532). W 0272-8842 (Q1)**

120. **M. Mumtaz,** M. Imran and M. Nasir Khan, "Frequency Dependent Electric Modulus Spectroscopy of $(Co_3O_4)_x$/(CuTl)-1223 Nanoparticles-Superconductor Composites", Journal of Electronic Materials **48** (2019) 3588–3594 **(I. F. = 2.047). W 0361-5235, 1543-186X (Q2)**

121. Y. Slimani, A. Selmi, E. Hannachi, M. A. Almessiere, **M. Mumtaz,** A. Baykal and I. Ercan, "Study of tungsten oxide effect on the performance of $BaTiO_3$ ceramics" Journal of Materials Science: Materials in Electronics **30** (2019)13509–13518. **(I.F. = 2.779). W 0957-4522, 1573-482X (Q2)**

122. **M. Mumtaz,** Tanzeel-ul-Rehman, M. Waqee-ur-Rehman, Y. Slimani, and Nawazish A. Khan, "Jahn-Teller Distortions and Infield Superconductivity of CuTl-1223 Phase" J. Supercond. Nov. Magn. **33** (2020) 331–336 **(I. F. = 1.675). X 1557-1947 (Q3)**

123. Asad Raza, Nawazish A. Khan, **M. Mumtaz** and M. Nasir Khan, "Dopants Effect on Dielectric Response of $(CuTl)_{0.5}Ba_2(CaMg)Cu_{3-x}A_xO_{10-\delta}$ Superconducting Phase" Journal of Low Temperature Physics **198** (2020) 145-157 **(I. F. = 1.618). X 1573-7357 (Q2)**

124. Abrar A. Khan, M. Sohail, M. Rahim, **M. Mumtaz,** M. Nasir Khan, "Frequency and temperature dependent dielectric constant of (Ag)x/CuTl-1223 nanoparticles-superconductor composites" Journal of Alloys and Compounds **825** (2020) 154138 **(I. F. = 6.371). W 0925-8388 (Q1)**

125. M. A. Almessiere, E. Hannachi, Y. Slimani, Ghulam Yasin, **M. Mumtaz,** M. R. Koblischka, A. Koblischka-Veneva, A. Manikandan, and A. Baykal, "Dimensionality and superconducting parameters of $YBa_2Cu_3O_{7-d}$/$(WO_3$ NPs$)_x$ composites deduced from excess conductivity analysis" Materials Chemistry and Physics **243** (2020) 122665 **(I. F. = 4.778). W 0254-0584 (Q1)**

126. M. Rahim, M. Amir Durrani, **M. Mumtaz,** M. Sohail, M. Qasim, and M. Nasir Khan, "Dielectric response of $(M)_z$/CuTl-1223 (M = Co, Cr) nanoparticle-superconductor composites" Physica C: Superconductivity and its Applications **570,** (2020), 1353601 **(I. F. = 1.534). W 0921-4534 (Q2)**

127. S. Ahmed, M. Zareef Khan, K. Nadeem, Hur Abbas, and **M. Mumtaz,** "Vortex dynamics in $(NiFe_2O_4)$x/CuTl-1223 nanoparticles-superconductor composites" Physica B: Condensed Matter **581** (2020) 411954 **(I. F. = 2.988). W 0921-4526 (Q2)**

128. **M. Mumtaz,** Liaqat Ali, Mubasher, Ahmed Saleh, Y. Slimani, Irfan Qasim, Mehwish Hassan, and Zubair Ahmad, "AC-conduction mechanism via dielectric measurements of $(Cr)_x$/(CuTl)-1223 nanoparticles-superconductor composites" Cryogenics **105** (2020), 103021**(I. F. = 2.134). W 0011-2275, 1879-2235 (Q2)**

129. Mubasher, **M. Mumtaz,** Mehwish Hassan, Liaqat Ali, Zubair Ahmad, M. Awais Imtiaz, M. Fahad Aamir, Abdul Rehman and K. Nadeem, "Comparative study of frequency dependent dielectric properties of ferrites MFe_2O_4 (M = Co, Mg, Cr and Mn) nanoparticles" Applied Physics A **126** (2020) 334 **(I. F. = 2.983). X 1432-0630, 0947-8396 (Q2)**

130. Mehroz Iqbal, Jameela Fatheema, Qandeel Noor, Malika Rani, **M. Mumtaz,** Ren-Kui Zheng, Saleem yaz Khan, and Syed Rizwan, "Co-existence of magnetic phases in two-dimensional MXene" Materials Today Chemistry 16 (2020) 100271 **(I.F. = 7.613). X 2468-5194. (Q1)**

131. Abrar A. Khan, **M. Mumtaz,** Liaqat Ali, Mubasher, Y. Slimani, M. Nasir Khan, and Irfan Qasim, "AC Conduction Mechanism in $(Cu)_x$/(CuTl)-1223 Nanoparticles–Superconductor Composites", Journal of Low Temperature Physics **199** (2020) 1268–1298 **(I. F. = 1.618). X 1573-7357 (Q2)**

132. Zaheer Ud Din Babar, M. S. Anwar, **Muhammad Mumtaz,** Mudassir Iqbal, Ren-Kui Zheng, Deji Akinwande and Syed Rizwan, "Peculiar magnetic behaviour and Meissner effect in two-dimensional layered Nb_2C MXene" 2D Mater. **7** (2020) 035012 **(I. F. = 6.816). W 2053-1583 (Q1)**

133. M. Imran, M. Zareef Khan, M. Waqee-Ur-Rehman, Asmat Ullah, S. Ahmed, K. Nadeem, and **M. Mumtaz,** "Role of Co_3O_4 Nanoparticles Addition in Infield Superconducting Properties of CuTl-1223 Phase" Journal of Low Temperature Physics **200** (2020**)** 152-163 **(I. F. = 1.618). X 1573-7357 (Q2)**

134. Mubasher, **M. Mumtaz,** Mehwish Hassan, Najeeb Ur Rehman Lashari, Zubair Ahmad, M. Tahir Khan, and M. Ali, "Synthesis and cyclic voltammetry of $CrFe_2O_4/(MWCNTs)_x$ nanohybrids" Journal of Materials Science: Materials in Electronics **31** (2020) 13909-13918 **(I. F. = 2.779). X 0957-4522, 1573-482X (Q2)**

135. R. Zohaib Rasool, K. Nadeem, M. Kamran, F. Zeb, Naman Ahmad, and **M. Mumtaz,** "Comparison of anomalous magnetic properties of non-collinear $CoCr_2O_4$ and $NiCr_2O_4$ nanoparticles" Journal of Magnetism and Magnetic Materials **514** (2020) 167225 **(I. F. = 3.097). W 0304-8853 (Q1)**

136. Mubasher, **M. Mumtaz,** Mehwish Hassan, Shafiq Ullah, and Zubair Ahmad, "Nanohybrids of multi-walled carbon nanotubes and cobalt ferrite nanoparticles: High performance anode material for lithium-ion batteries" Carbon **171** (2021) 179-187 **(I. F. = 11.306). W 0008-6223 (Q1)**

137. Zaheer-ud-Din Babar, R. K Zheng, **M. Mumtaz,** and S. Rizwan, "Magneto-transport of Mechanically-Pressed Niobium Carbide (Nb_2C) Distorted MXene" Materials Letters **285** (2021) 129210. **(I. F. = 3.574). W 0167-577X (Q1)**

138. Mubasher, and **M. Mumtaz** "Nanocomposites of Multi-Walled Carbon Nanotubes/Cobalt Ferrite Nanoparticles: Synthesis, Structural, Dielectric and Impedance Spectroscopy" Journal of Alloys and Compounds **866** (2021) 158750 **(I. F. = 6.371). W 0925-8388 (Q1)**

139. Mubasher, **M. Mumtaz,** Najeeb Ur Rehman Lashari, Mehwish Hassan, Songpon Tangsee, and M. Tahir Khan, "Multi-walled Carbon Nanotubes and Chromium Ferrites Nanoparticles Nanohybrids as Anode Materials for Lithium-ion Batteries" Journal of Alloys and Compounds **872** (2021) 159654 **(I. F. = 6.371). W 0925-8388 (Q1)**

140. Abrar A. Khan, **M. Mumtaz,** Mubasher, M. Khan, Liaqat Ali1, M. Rahim, and M. Ali, "Effects of Non-magnetic Metallic Zinc Nanoparticles on the Dielectric Properties of CuTl-1223 Superconducting Phase" Journal of Superconductivity and Novel Magnetism **34** (2021) 1341–1350 **(I. F. = 1.675). X 1557-1947 (Q3)**

141. Sidra Irum, Saadia Andleeb, Sumbal Sardar, Zeeshan Mustafa, Ghazanfar Ghaffar, **M. Mumtaz,** Mubasher, Muhammad Arslan, and Mudassar Abbas**, "**Chemical Synthesis and Antipseudomonal Activity of Al-doped NiO Nanoparticles", Frontiers in Materials **8** (2021) 673458 **(I. F. = 3.985). W 1557-1947, 2296-8016 (Q2)**

142. Mubasher, **M. Mumtaz,** and M. Ali, "Structural, Dielectric and Electric Modulus Studies of $MnFe_2O_4/(MWCNTs)_x$ Nanocomposites", Journal of Materials Engineering and Performance **30** (2021) 4494–4503 **(I. F. = 2.036). W 1059-9495, 1544-1024 (Q2)**

143. Yaseen Muhammad, **M. Mumtaz,** Liaqat Ali, M. Ali, Mubasher, M. Rahim, Nazir Hussain, and Zafar Iqbal, "Impact of High Pelletize Pressure on Superconducting Properties of $(Cu)_x$/CuTl-1223 Composites", Journal of Superconductivity and Novel Magnetism **35** (2022)

669–678 **(I. F. = 1.675). X 1557-1947, 1557-1939 (Q3)**

144. Mubasher, **M. Mumtaz,** Basit Ali, S. Mustansar Abbas, Kyung-Wan Nam, M. Tahir Khan, M. Ali, Bahar Hussain, M. Muddassar Khan, and Ghazanfar Mehmood, "Nanohybrids of Hematite Nanoparticles and Reduced Graphene Oxide Nanosheets: Anode Materials for Lithium-Ion Batteries", Journal of Alloys and Compounds **907** (2022) 164392 **(I. F. = 6.371). W 0925-8388 (Q1)**

145. Mubasher, **M. Mumtaz**, Hamza Nazir, Bahar Hussain, Sana Ullah, and M. Ali, "AC-conduction mechanism in SiO_2 coated $BaFe_2O_4$ nanoparticles", Applied Physics A **128** (2022) 285 **(I. F. = 2.983). X 1432-0630, 0947-8396 (Q2)**

146. Mubasher, **M. Mumtaz**, Arslan Bashir, M. Rashid, Tayyab Umar, Zahid Sarfraz, and Hamid Zia, "Barium Doping Effects on Frequency-Dependent Dielectric Properties of Cobalt Ferrite Nanoparticles", Materials Innovations **2(3)** (2022) 1-10. **X 2790-1963 (Q4)**

147. **M. Mumtaz**, Mubasher, M. Ali, S. Rizwan Hussain, and M. Irshad Khan, "Influence of Graphene Oxide on AC-conduction of Hematite Nanoparticles", Materials Innovations **2(2)** (2022) 26-35. **X 2790-1963 (Q4)**

148. **M. Mumtaz,** Mubasher, Zuhda Saeed, and Zahid Sarfraz, "Structural, Dielectric and Impedance Properties of $MgFe_2O_4$ Nanoparticles and Multi-walled Carbon Nanotubes Nanocomposites, Journal of Superconductivity and Novel Magnetism (2022) **(I. F. = 1.675). X 1557-1947, 1557-1939 (Q3)**

149. Mubasher, **M. Mumtaz,** and Shafiq Ullah "Enhancement of lithium ions storage capacity of manganese ferrites through hybridization with multi-walled carbon nanotubes" Journal of Materials Science: Materials in Electronics **34** (2023) 1479 **(I. F. = 2.779). X 0957-4522, 1573-482X (Q2)**

150. Mubasher, **M. Mumtaz,** M. Hassaan, Qazi Hashmat Ali Khan, M. Nadeem, M. Inam Ul Haq, and Zahid Sarfraz, "Influence of tetraethyl orthosilicate coating on dielectric, impedance, and modulus properties of barium hexaferrite nanoparticles prepared by a modified sol-gel method" AIP Advances **13** (2023) 115313. **(I. F. = 1.579). X 2158-3226 (Q2)**

151. Yaseen Muhammad, M. Rahim, **M. Mumtaz,** Nazir Hussain, and Bahar Hussain, "Comparative investigation of low and high pelletize pressure for (Ag)x/CuTl-1223 nanoparticles-superconductor composites", Phys. Scr. 98 (2023) 125967**(I. F. = 3.081). W 0031-8949 (Q2)**

CONFERENCES PROCEEDINGS' PUBLICATIONS

1. **M. Mumtaz,** and Zahir Usman, "Tuning of Dielectric Parameters of $(CNTs)_x$/CuTl-1223 Nanotubes-Superconductor Composites" ENEFM-2015 Conference, Published in Springer Proceeding (2016).
2. **M. Mumtaz,** and X. G. Qiu, "Berezinskii-Kosterlitz-Thouless Transition in Superconducting Nb Films with Kagomé Arrays of Antidots" SATF-2018 Conference, Published in Conference Proceeding (2018)

CONFERENCES/ SEMINARS/ WORKSHOPS

1. 3rd International Scientific Spring-2011, National Center for Physics (NCP) Islamabad, Pakistan, 2011.
2. National University of Science and Technology (NUST) Conference on Applications and Methods of Physics, NUST Islamabad, Pakistan, 2011.
3. Pakistan Nuclear Regulatory Authority (PNRA) Seminar at Department of Physics IIU Islamabad, Pakistan, 2011.
4. 4th International Scientific Spring-2012, National Center for Physics (NCP), Islamabad, Pakistan, 2012.
5. PAK-CHINA Business Forum, Pak-China Friendship center Islamabad, COMSATES Institute of Information Technology, Islamabad, Pakistan, 2012.
6. International Symposium on Frontier of Superconductivity Research (II) ARPES on Unconventional Superconductors, National Lab for Superconductivity Institute of Physics Chinese Academy of Sciences Beijing 100190, China, 2012.
7. 10th International Bhurhan Conference on Applied Sciences & Technology (10th IBCAST-2013), National Center for Physics (NCP), Islamabad, Pakistan.
8. 4th International Advances in Applied Physics and Materials Science Congress and Exhibition (APMAS2014) on 24 to 27 April 2014 in Fethiye-Mugla, Turkey 2014.
9. 3rd International Congress on Energy Efficiency and Energy Related Materials (ENEFM-2015) on19 to 23 October 2015 in Fethiye-Mugla, Turkey 2015.
10. 13th International Bhurhan Conference on Applied Sciences & Technology (13th IBCAST-2016), National Center for Physics (NCP), Islamabad, Pakistan.
11. 14th International Bhurhan Conference on Applied Sciences & Technology (14th IBCAST-2017), National Center for Physics (NCP), Islamabad, Pakistan.
12. 1th Annual Conference on Current Usage of Nanotherapeutics & Bio durges (2018), Qauid-i-Azam Auditorium Old Campus, IIU Islamabad, Pakistan.
13. Science & Applications of Thin Films, Conference & Exhibition (SATF 2018) held on September 17-21, 2018, Cesme, Izmir, Turkey.
14. 6th Annual Global Health & Infection Disease Conference and Symposium, held on April 5-6, 2018, Washington University, School of Medicine, Missouri St-Louis, USA.
15. 16th International Bhurban Conference on Applied Sciences & Technology (16th IBCAST-2019), National Center for Physics (NCP), Islamabad, Pakistan.

16. 2nd Punjab Young Physicists Tournament 19, 20th October 2019, Riphah International University, Lahore Campus, Lahore, Pakistan.

17. 4th International Conference on Materials Science & Nanotechnology 2020 (MSNANO20), Department of Physics, GCU Faisalabad, Pakistan

18. 17th International Bhurban Conference on Applied Sciences & Technology (17th IBCAST-2020), National Center for Physics (NCP), Islamabad, Pakistan.