

IMRAN SADIQ



Research Profile

https://scholar.google.com.pk/citations?view_op=new_articles&hl=en&imgq=Dr.+Imran+Sadiq+Khan

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Present Address

Centre of Excellence in Solid State Physics, University of the Punjab, Quaid-i-Azam Campus, Lahore, Pakistan. 54590

Permanent Address

Raza Colony Chani goth Road Ali Pur, District Muzaffar Garh, Punjab, Pakistan.

Date of Birth

March 07, 1982

Nationality

Pakistani

Gender

Male

Marital Status

Married

Religion

Islam

Passport No.

Objective

The main objective is to indulge in research activities and initiate novel research projects at the institution to lead and train the early-stage researchers, so that I can contribute at my level best for the development of host institution, my country Pakistan and the humanity.

Present Employment

January 1, 2015 to Date Working as an **Associate Professor** at the Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan, under Tenure Track System (TTS).

<http://cssp.edu.pk/facultystaff.php>

Education

2022-2023 Post Doctorates

Department of Molecular Science and Nanosystems, Ca' Foscari University of Venice, Venice, Italy

Project title: *Hexaferrites Self-biased Circulator Material Synthesis Project*

2010-2014 PhD in Physics

Bahauddin Zakariya University, Multan, Pakistan

Thesis Title: *Influence of Rare Earth Elements on Synthesis and Characterization of Hexagonal Ferrites for High Frequency Applications*

2007-2009 M.Phil. in Physics (1st Division)

Bahauddin Zakariya University, Multan, Pakistan

Thesis Title: *Characterization of Sr-based W-type hexagonal ferrites prepared by sol-gel method*

2003-2005 M.Sc. in Physics (1st Division)

Bahauddin Zakariya University, Multan, Pakistan

2001-2003 B.Sc. (1st Division)

Bahauddin Zakariya University, Multan, Pakistan

Subjects: Physics, Mathematics A, Mathematics B

Research Experience

Current research work: I am working on the high frequency applications of the nano-magnetic materials. The main emphasis of our group research work is to synthesize the microwave absorbing material useful for reducing the electromagnetic pollution. Moreover, I am also synthesizing the different type of new magnetic ferrites materials which have not been reported earlier or very few details are available like T-type, R-type and V-type hexagonal ferrites. I am also working on the applications of these materials in bio-sensors, targeted drug delivery, hyperthermia, Photo-thermal therapy and etc.

During Post doctorate: I worked on the synthesis of hexaferrites materials suitable for self-biased circulators. The circulator is the important microwave operating device which works in transmits and receive mode simultaneously. This microwave devices, the circulator, operates in nonreciprocal fashion requires the breaking of the time reversal symmetry which is carried out with the help of hexaferrites materials. A permanent magnet is used to externally bias the hexaferrites material to maintain the hexaferrite's magnetic field perpendicular to plane of the device.

During my Ph.D., I worked on Sol-Gel synthesis of hexagonal ferrites. The main focus of my research work was to understand the influence of different rare earth elements on the *structural, magnetic, optical, electrical and microwave absorption properties* of

hexagonal ferrites. I had synthesized different materials with high reflection loss suitable for high frequency operating devices in the range of 7-12 GHz.

I had visited *School of Chemistry and Chemical Engineering, Queen's University, Belfast, UK* in 2012, synthesized and characterized samples in "The Centre for theory and applications of Catalysis (CenTACat)" lab. The microwave absorption properties were carried out in ECIT, QUB under the supervision of *Prof. Dr. Vincent Fusco*.

During my M.Phil., I used sol-gel auto-ignition technique to synthesize the Ce substituted Sr- based hexagonal Ferrites for the investigation of structural, electrical and magnetic properties. I performed the measurements to use the synthesized magnetic material in high-frequency devices and for reducing the eddy current losses.

Research Expertise

- ✦ I have a broad knowledge, training and experience of following equipment and characterization techniques, and can handle independently:
FESEM, EDS, XRD, Four-Point Probe Apparatus, Keithley Source Meter, Furnaces, Vacuum Pumps, Fourier transform Infrared Spectroscopy (FTIR), Ultrasonic bath etc.
- ✦ I have a wide knowledge, but fair training and experience of following equipment to operate independently:
TEM, AFM, VSM, Mass Spectrometer, MBE, CVD, Vector Network Analyzer etc.

Research Interests

Materials Synthesis and Characterization, Carbon Materials, Graphene, 2D Materials, Thin Film Technology, Microwave absorption properties, Hyperthermia, Bio-sensors etc.

Research Publications

Journal Papers: 69

Impact Factor: 192.89

Citations (as per web of Science): 1619

H-Index: 23

Conference Paper: 1

The **Updated Research Profiles** can be found at following Web Addresses:

Web of Science ID: [ABG-2049-2020](https://www.researchgate.net/profile/Imran-Sadiq)

Researchgate ID: <https://www.researchgate.net/profile/Imran-Sadiq>

GoogleScholar: https://scholar.google.com.pk/citations?view_op=new_articles&hl=en&imq=Dr.+Imran+Sadiq+Khan

Research Publications

69. Exploration of structural, magnetic, electrical polarization, optical and microwave absorption properties of rGO/hexaferrites composites

Mehboob Ali, Saba Sharif, Farhan Sadiq, Humaira Aslam, Zainab Altaf, Sadaf Naz, **Imran Sadiq**, Eman. A. Alghamdi, Muhammad Raheel, Muhammad Shahbaz, Saira Riaz, Shahzad Naseem
[Polyhedron Journal 284 \(2026\) 117914](#)

68. Evaluation of nano-sized hexaferrites for hyperthermia applications

Muhammad Talha Arif, Farhan Sadiq, **Imran Sadiq**, Robert C. Pullar, Eman. A. Alghamdi, Muhammad Shahbaz, Samreen Saeed, Sadaf Naz, Saira Riaz and Shahzad Naseem
[International Journal of Modern Physics B \(Accepted\)](#)

67. Synthesis of nano-ferrites-based materials: A new paradigm for electrochemical sensors

Sajjad Hussain, Imamdin Chandio Shakoor Ahmed Solangi, Md Abdur Rashid, Muhammad Shahbaz, **Imran Sadiq**, Jameel Ahmed Baig, Khalid Hussain Thebo
[Journal of Environmental Chemical Engineering 13 \(2025\) 120218](#)

66. Theoretical and experimental revelation of the structural, dielectric, optical and magnetic properties of Sr_{1-x}Ni_xFe₈SnO₁₅ (x = 0, 0.2, 0.4, and 0.6) V-type hexagonal ferrites

Rida Rasheed, Farhan Sadiq, Mehboob Ali, Ghulam Hussain, **Imran Sadiq**, Robert C. Pullar, Samreen Saeed, Sadaf Naz, Saira Riaz and Shahzad Naseem
[Journal of Materials Chemistry C, DOI: 10.1039/d5tc02502h \(2025\)](#)

65. Green Synthesis, Microstructural Characterization, and Synergizing Effect of Na- β- Type Hexagonal Ferrite Nanomaterials as a Probe for Cefixime Electrochemical Sensors

Sajjad Hussain, **Imran Sadiq**, Jameel Ahmed Baig, Shakoor Ahmed Solangi, Zahid U. Khan
Imam Bakhsh Solangi, Saira Riaz, Robert C. Pullar, Khalid Hussain Thebo, Mohsin Kazi
[Microscopy Research and Technique, 2025; 0:1–15](#)

64. Investigating Al-doped Y-type hexaferrite/polyaniline composites: synthesis, structural, and dielectric properties

Muhammad Usman, Muhammad Waqas, Farooq Ahmad, Muhammad Danis, Anwar Manzoor Rana, **Imran Sadiq**, Raishum Qaiser, Shahid Atiq, Ahmed Althobaiti

63. Synergetic effect of hexaferrite and reduced graphene oxide (rGO) in photothermal therapy and hyperthermia applications

Muhammad Jamshaid Shabbir, Ruqyya Aqeel, Miqdad Hassan, Farhan Sadiq, **Imran Sadiq**, N. Bano, Abdul Moqet Hai, Robert C. Pullar, Muhammad Raheel, Muhammad Talha Arif, Samreen Saeed, Saira Riaz, Shahzad Naseem
Synthetic Metals 309 (2024) 117775

62. Influence of Mg²⁺ Substitution on Structural, Electrical Polarization, and Magnetic Properties of Sr-Based R-Type Hexagonal Ferrites

Iqra Ijaz, Sana Jamal Din, Raja Hamza Arshad, Samreen Saeed, **Imran Sadiq**, Farhan Sadiq, Mishal Idrees, Sajjad Hussain, Muhammad Shahbaz, Sadaf Naz, Muhammad Jamshaid Shabbir, Saira Riaz, Shahzad Naseem, Farooq Ahmad
Results in Surfaces and Interfaces 17 (2024) 100298

61. Modifications in the structural, optical, magnetic, electrical polarization and hyperthermia properties of SrSnFe₈O₁₅ V-type hexaferrites with Sm³⁺ ions substitution

Laraib Ameen, Asif Ameen, Farhan Sadiq, Samreen Saeed, **Imran Sadiq**, N. Banoc, Muhammad Raheel, Saira Riaz, Shahzad Naseem
Ceramics International 50 (2024) 41407–41416

60. An R-type hexagonal ferrite nanoparticles-based electrochemical sensor for Levofloxacin detection in pharmaceutical and clinical specimens

Sajjad Hussain, **Imran Sadiq**, Jameel Ahmed Baig, Mauro Bertotti, Saira Riaz
Microchemical Journal 201 (2024) 110690

59. Revelation of the Microwave Absorption Properties of Nano-Sized Doubly Substituted Hexagonal Ferrites

Mishal Idrees,* **Imran Sadiq**, Hasan M. Khan, Farhan Sadiq, Sajjad Hussain, Saira Riaz, and Shahzad Naseem
Crystal Research Technology 59 (2024) 2300204

58. Adopting the sol–gel auto-combustion approach to synthesize the La³⁺ substituted hexagonal ferrites suitable for permanent magnets and high-frequency applications

Abrar Hussain, **Imran Sadiq**, Ghulam Muhammad Mustafa, Muhammad Abou bakar, Farhan Sadiq, Samreen Saeed, Muhammad Shahbaz, Nadir Abbas, Muhammad Irfan Ahmad, Saira Riaz, Shahzad Naseem
Journal of Sol-Gel Science and Technology, <https://doi.org/10.1007/s10971-023-06293-6>

57. Electroactive ferrites nanostructure driven electrochemical platform for selective detection of dopamine

Sajjad Hussain, **Imran Sadiq**, Jameel Ahmed Baig, Farhan Sadiq, Khalil Akhtar, Imam Bakhsh Solangi, Mishal Idrees, Muhammad Shahbaz, Samreen Saeed, Ram Chand, Saira Riaz, Shahzad Naseem
Inorganic Chemistry Communications 160 (2024) 111997

56. Quantitative and qualitative aspects of Ni-substitution on various properties of nano-sized hexagonal ferrites

Muhammad Zeshan, Muhammad Junaid Iqbal, Amir Hamza, **Imran Sadiq**, Farhan Sadiq, Muhammad Raheel, Ghulam Muhammad Mustafa, Muhammad Shahbaz, Samreen Saeed, Saira Riaz, and Shahzad Naseem
Journal of Materials Science: Materials in Electronics, 35 (2024) 145

55. Study of Cu-Zn Spinel Ferrites on Europium Substitution for High-Frequency Applications

Ashfaq Ahmad¹ · Hassan M. Khan^{1,4} · Mohammad Imran³ · Mohammad A. Assiri³ · **Imran Sadiq**, Naveed Ahmad⁶ · Muhammad Iqbal Hajana⁹ · J. El Ghoul^{5,7} · Sharif Abu Alrub⁵ · Zainab Mufarreh Elqahtani
Journal of Electronic Materials : <https://doi.org/10.1007/s11664-023-10858-0>

54. Multi-characterization for Electromagnetic Interference in Electronic Circuits for CaPb-based W -type Hexaferrites

Rashida Anjum, Hasan M. Khan, Zhi L I, Muhamamd Aslam, **Imran Sadiq**, Zahida Batool, M. N. Panwar, Tahira Akhtar, Abeer A. AlObaid, Ghazanfar Nazir, Muhammad Zahid
Arabian Journal for Science and Engineering, <https://doi.org/10.1007/s13369-023-08031-0>

53. Raveling out the effect of Pr³⁺ ions substitution on different properties of nano-sized hexagonal ferrites

Azka Ramzan, Sadaf Naz, Azqa Zubair, **Imran Sadiq**, Qammar Abbas, Farhan Sadiq, Muhammad Shahbaz, Samreen Saeed, Mishal Idrees, Sajjad Hussain, Saira Riaz, Shahzad Naseem
Materials Science and Engineering B 297 (2023) 116717

52. Evolution of nano-sized hexagonal ferrites suitable as permanent magnets and for high frequency applications

Qammar Abbas, **Imran Sadiq**, Hasan M. Khan, Farhan Sadiq, Muhammad Jamshaid Shabbir, Muhammad Shahbaz, Samreen Saeed, Ghulam M. Mustafa, Saira Riaz, Shahzad Naseem
Physica B: Condensed Matter 670 (2023) 415343

51. Effect of microwave irradiations on exchange bias and spin reorientation in cr doped iron oxide thin films – Sol-Gel approach

Sidra Khalid, M. Imran, Zaheer H. Shah, Zohra N. Kayani, **Imran Sadiq**, Shahz ad Naseem, Saira Riaz

50. One-pot hydrothermal synthesis of a carbon quantum dot/CaFe₂O₄ hybrid nanocomposite for carcinogenic Congo red dye degradation

Muhammad Innam ur Rahman, Hasan M. Khan, Muhammad Naeem Ashiq, Misbah Ul Islam, Saeed Ahmad Buzdar, **Imran Sadiq**, Shehla Honey, Zahida Batool, Rizwan Sheikh, Muhammad Zahid, Mohammad A. Assiri, Muhammad Imran and Thamraa Alshahrani
RSC Advances, 13 (2023) 14461–14471

49. Electrocatalytic sensing of metronidazole by R-type Hexagonal nanoferrites modified electrode

Sajjad Hussain, **Imran Sadiq**, Jameel Ahmed Baig, Farhan Sadiq, Imam Bux Solangi, Khalil Akhtar, Shakoor Ahmed Solangi, Mishal Idrees, Saira Riaz, Shahzad Naseem
Inorganic Chemistry Communications (2023) 110832

48. Zn/Ba nanoparticles doping effect on surface interface, Morphology, and dielectric elucidation of spinel ferrites

Imran Ali, Hasan M. Khan, Muhammad Naveed Akram, Yang-Fang Chen, Mujahid Mustaqeem, Tawfik A. Saleh, Muhammad Ahmad, **Imran Sadiq**, Nimra Lateef
Surfaces and Interfaces, 38 (2023) 102862

47. Influence of Mg(II) substitution on the structural, magnetic, and permeability properties of R-type hexagonal ferrites

Zahoor Ul Hassan, **Imran Sadiq**, Hasan Mehmood Khan, Sajjad Hussain, Farhan Sadiq, Mishal Idrees, Muhammad Shahbaz, Samreen Saeed, Muhammad Imran, Saira Riaz and Shahzad Naseem
European Journal of Chemistry 14 (2) (2023) 165-171

46. Synthesis and characterization of vanadium ferrites, electrochemical sensing of acetaminophen in biological fluids and pharmaceutical samples

Sajjad Hussain, **Imran Sadiq**, Jameel Ahmed Baig, Farhan Sadiq, Muhammad Shahbaz, Imam Bakhsh Solangi, Mishal Idrees, Samreen Saeed, Saira Riaz, Shahzad Naseem
Ceramics International, <https://doi.org/10.1016/j.ceramint.2022.10.340>

45. Theoretical and experimental investigations: Synergetic effect of Yb–Cu substitution on different properties of hexagonal ferrites

Mishal Idrees, Faisal Abbas, **Imran Sadiq**, Hasan M. Khan, Farhan Sadiq, Muhammad Nadeem, Sajjad Hussain, Saira Riaz, Shahzad Naseem
Journal of Physics and Chemistry of Solids 170 (2022) 110904 (14. July)

44. Determination of dual magnetic phases and the study of structural, dielectric, electrical, surface morphological, optical properties of Ce³⁺ substituted hexagonal ferrites

Zeeshan Hassan, **Imran Sadiq**, Riaz Hussain, Farhan Sadiq, Mishal Idrees, Sajjad Hussain, Saira Riaz, Shahzad Naseem
Journal of Alloys and Compounds 906 (2022) 164324 (26 Feb)

43. Structural, morphological, dielectric and magnetic properties of Ba_{1-x}Cr_x Fe₁₂O₁₉ M type hexaferrites

Muhammad Zahid, Hasan M. Khan, Aziz Ur Rehman, Abdul Waheed, **Imran Sadiq**, Ehsan Mazhar, Mohammed A. Assiri, Muhammad Imran, Muhammad Inam Ur Rehman and Mujahid Mustaqeem
Physica Scripta 96 (2021) 125405

42. Structural Elucidation with Improved Dielectric and Magnetic Properties of Sol–Gel Synthesized Cr³⁺ Substituted M-Type Sr²⁺ Hexaferrites

Muhammad Zahid, Hasan M. Khan, **Imran Sadiq**, Aziz Ur Rehman, Abdul Waheed, Ehsan Mazhar, Mohammed A. Assiri, Muhammad Imran, Nauman Usmani, and Imran Khan
Journal of Materials Engineering and Performance, <https://doi.org/10.1007/s11665-021-06263-5> (11 Aug. 2021)

41. Experimental and theoretical studies: Impact of Mg-Yb double substitution on structural, dielectric and electrical properties of nanoferrites

Mishal Idrees, **Imran Sadiq**, Sajjad Hussain, Farhan Sadiq, Muhammad Javaid, Saira Riaz, Shahzad Naseem
Materials Science and Engineering B 273 (2021) 115435 (30 Aug)

40. Numerical Modeling and Optimization of Lead-Free Hybrid Double Perovskite Solar Cell by Using SCAPS-1D

Syed Sajjad Hussain, Saira Riaz, Ghazi Aman Nowsherwan, Khizer Jahangir, Akram Raza, Muhammad Javaid Iqbal, **Imran Sadiq**, Syed Mutahir Hussain, and Shahzad Naseem
Journal of Renewable Energy, Volume 2021, Article ID 6668687, 12 pages (17-July)

39. Synthesis and characterization of Oleic acid coated Fe₃O₄ Nanoparticles in Poly Alpha Olefin Oil based

Nanofluids for Heat Transfer applications

Muhammad Nadeem, Maryam Shaheen, Muhammad Zubair, Muhammd Saeed Akhtar, Muhammd Khalid, Muhammad Arshad Javid, **Imran Sadiq**, Hasan Mehmood Khan, Sarwat Zahra

[International Journal of Nanoelectronics and Materials](#), Vol. 14 (2021) 37-48 (14 January)

38. Volume fraction effect on thermophysical properties of Fe₃O₄/MWCNT based Hybrid Nanofluid

Sumbul Purree, Muhammad Nadeem, Azeem Shahzad, Muhammad Zubair, Muhammd Saeed Akhtar, **Imran Sadiq**, Hasan Mehmood Khan, Sarwat Zahra

[International Journal of Nanoelectronics and Materials](#), Vol. 14 (2021) 27-36 (14 January)

37. Enhanced Structural and Dielectric Properties of Calcium and Chromium based M-type hexagonal ferrites

Muhammad Zahid, Hasan M. Khan, **Imran Sadiq**, Khuram Ali, Misbah Mirza, M.U. Islam, Saeed Ahmad Buzdar, Aziz-ur-Rehman

[Journal of Materials Science: Materials in Electronics](#) <https://doi.org/10.1007/s10854-021-05584-4> (2021) (19 Feb)

36. Characterization and curve fittings of Mg⁺² substituted R-type hexagonal ferrites

Sajjad Hussain, **Imran Sadiq**, Syed Sameen Jan, Mishal Idrees, Farhan Sadiq, Saira Riaz & Shahzad Naseem
[Physica B: Condensed Matter](#) 605 (2021) 412642

35. Exploration of structural, optical, dielectric properties and curve fittings of Yb³⁺-substituted β-type hexagonal ferrites

Sajjad Hussain, **Imran Sadiq**, Syed Sameen Jan, Mishal Idrees, Farhan Sadiq, Saira Riaz & Shahzad Naseem
[Journal of Materials Science: Materials in Electronics](#) <https://doi.org/10.1007/s10854-020-04345-z>

34. La³⁺-substituted β-ferrite: Investigation of structural, dielectric, FTIR and electrical polarization properties

Samreen Saeed, **Imran Sadiq**, Sajjad Hussain, Mishal Idrees, Farhan Sadiq, Saira Riaz, Shahzad Naseem

[Journal of Alloys and Compounds](#) 831 (2020) 154854

33 Synthesis and Characterization of Aluminium and Cobalt substituted W type Hexagonal Ferrites

Muhammad Mujahid, Hasan M Khan, Zartasha Sarwar, Khuram Ali, Mohammad Shoib, **Imran Sadiq**, XU Yongbing, Muhammad Zahid, Muhammad Nadeem, Tahira Akhtar, Rashida Anjum, Innam ur Rehmana

[Journal Of Nanoscope](#), 1 (2020) 65-72

32. Effect of binary mixture of Nd–Zn ions on the electrical, structural and dielectric behavior of calcium-barium M-type hexaferrite nanoparticles

Hasan M. Khan, **Imran Sadiq**, Khuram Ali, Misbah Mirza, Saeed Ahmed Buzdar, Zahida Batool, Muhammad Zahid, Muhammad Nadeem, Aziz ur Rehman & M. U. Islam

[Indian Journal of Physics](#) <https://doi.org/10.1007/s12648-020-01760-0>

31. Theoretical and experimental investigation of Microwave absorbing X-type hexaferrites nanomaterials synthesized by cotton soaked method

Imran Sadiq ; Farhan Sadiq ; Aamir Shahzad ; Amber Sadiq ; Hasan M. Khan ; Shahzad Naseem ; Saira Riaz
[IEEE Transactions on Magnetics](#) 56 (2020) 1-10

30. Peculiar magnetic behavior and structural, electrical, dielectric properties of substituted R-type hexagonal ferrites

Muhammad Shahbaz, **Imran Sadiq**, M. Muzamil Hussain Butt, Abdul Basit Javaid, Mishal Idrees, Sajjad Hussain, Farhan Sadiq, Saira Riaz, Shahzad Naseem a, Hasan M. Khan
[Journal of Magnetism and Magnetic Materials](#) 499 (2020) 166309

29. Tunable properties of rare earth elements (Ce, Dy, Yb, La and Pr) substituted R-type hexagonal ferrites

Abdul Basit Javaid1 · **Imran Sadiq**1 · Haseeb Shah1 · Mishal Idrees1 · Samreen Saeed1 · Sajjad Hussain1 · Muhammad Shahbaz1 · S. Sameen Jan1 · Saira Riaz1 · Shahzad Naseem1 · Hasan M. Khan2 · Farhan Sadiq3
[Journal of Materials Science: Materials in Electronics](#) <https://doi.org/10.1007/s10854-019-02301-0>

28. Effect of Dy-Co on physical and magnetic properties of X-type hexaferrites (Ba_{2-x}Dy_xCu₂Fe_{28-y}Co_yO₄₆)

Sana Ullah Asif, Shaukat Rizwan, Muhammad Qadeer Awan, Muhammad Wasim Khan, **Imran Sadiq**, Muhammad Ehsan Mazhar, Ashfaq Ahmad, S. Sajjad Hussain, Ehsan Ullah Khan, Wanbiao Hu, Muhammad Naeem Ashiq
[Chinese Journal of Physics](#) 61 (2019) 47–54

27. Structural, magnetic and electrical study of rare earth doped Y- type hexaferrites

Hasnain Shakeel. Hasan M. Khan. Irshad Ali. Khuram Ali. Muhammad Asif Iqbal. **Imran Sadiq**. Ghulam Murtaza. M. U. Islam. Muhammad Naeem Ashiq. Muhammad Nadeem
[Journal of Materials Science: Materials in Electronics](#) <https://doi.org/10.1007/s10854-019-00982-1>

26. Preparation and characterization of doubly substituted microwave absorbing material by sol-gel technique for super high frequency applications
Imran Sadiq, Shahzad Naseem, Saira Riaz, S. Sajjad Hussain, Muhammad Naeem Ashiq, Mazhar Rana
Progress in Natural Science: Materials International 28 (2018) 478–482
25. Investigation of structural, electrical, electrical polarization and dielectric properties of CTAB assisted N^{2+} substituted R-type nano-hexaferrites
Tehmina Amjad, **Imran Sadiq**, Abdul Basit Javaid, Saira Riaz, Shahzad Naseem, Muhammad Nadeem
Journal of Alloys and Compounds 770 (2019) 1112-1118
24. Synthesis and Electrical Behavior of Ni-Ti substituted Y-type Hexaferrites for High Frequency application
Bashir Ahmad, Muhammad Naeem Ashiq, Saleem Mumtaz, Irshad Ali, Muhammad Najam-Ul-Haq, **Imran Sadiq**
Journal of Magnetism and Magnetic Materials 451 (2018) 787–792
23. Study of structural, magnetic and microwave absorption properties of Dy-Mn substituted nanosized material in X-band frequency range
Imran Sadiq, Shahzad Naseem, Saira Riaz, Hasan M. Khan, Muhammad Naeem Ashiq, Mazhar Rana,
Journal of Alloys and Compounds 715 (2017) 284-290
22. Multiferroics $BiMn_{1-x}Al_xO_3$ nanoparticles: Synthesis, characterization and evaluation of various structural, physical, electrical and dielectric parameters
Bashir Ahmad, Rabia Raissat, Saleem Mumtaz, Zahoor Ahmad, **Imran Sadiq**, Muhammad Naeem Ashiq, Muhammad Najam-ul-Haq,
Journal of Magnetism and Magnetic Materials 433 (2017) 71–75
21. Systematic spatial and stoichiometric screening towards understanding the surface of ultrasmall oxygenated silicon nanocrystal
Shanawer Niaz, Aristides D. Zdetsis, Emmanuel N. Koukaras, Ouz Gülseren, **Imran Sadiq**
Journal of applied surface science 387 (2016) 771-778
20. Enhanced microwave absorption properties of CTAB assisted Pr-Cu substituted nanomaterial
Imran Sadiq, Shahzad Naseem, Saira Riaz, Hasan M. Khan, Muhammad Naeem Ashiq, Mazhar Rana,
Journal of Magnetism and Magnetic Materials 414 (2016) 198-203
19. Optical Properties of Pure and Mixed Germanium and Silicon Quantum Dots
Shanawer Niaz, Aristides D. Zdetsis, Manzoor Ahmad Badar, Safdar Hussain, **Imran Sadiq** and Muhammad Aslam Khan
Journal of chemical society of Pakistan 38 (2016) 207-213
18. Electrical transport properties and temperature-dependent magnetization behavior of TbZn-substituted $Ca_{0.5}Ba_{0.5}Fe_{12}O_{19}$ hexaferrites
Hasan M. Khan, M. U. Islam, Yong bing Xu, Irshad Ali, M. Asif Iqbal, M. Ishaque, Muhammad Azhar Khan, Nazia Karamat, **Imran Sadiq**
Journal of Sol-Gel Science and Technology April, 78 (2016) 151-158
17. Tunable microwave absorbing nano-material for X-band applications
Imran Sadiq, Shahzad Naseem, Muhammad Naeem Ashiq, M.A. Khan, Shanawer Niaz, M.U. Rana
Journal of Magnetism and Magnetic Materials 401 (2016) 63 – 69
16. Structural, electrical and magnetic study of ND-NI substituted W-type Hexaferrite
Imran Khan, **Imran Sadiq**, Irshad Ali, Mazhar-Ud-Din Rana, Muhammad Najam-Ul-Haq, Afzal Shah, Imran Shakir, Muhammad Naeem Ashiq
Journal of Magnetism and Magnetic Materials 397 (2016) 6 –10
15. Substitutional Effect of Rare Earth Element Ho^{3+} on Structural and Magnetic Properties of yttrium Iron Garnets
K. J.khan, F. Saleemi, T.Abbas, **I. Sadiq**
Journal of Ovonic Research 11(2015) 263 - 270
14. Structural and dielectric properties of doped ferrite nanomaterials suitable for microwave and biomedical applications"
Imran Sadiq, Shahzad Naseem, Muhammad Naeem Ashiq, M.A. Khan, Shanawer Niaz, M.U. Rana

13. **Spin canting effect and microwave absorption properties of Sm-Mn substituted nanosized material**
Imran Sadiq*, Shahzad Naseem^a, Muhammad Naeem Ashiq^b, M. Asif Iqbal^c, Irshad Ali^c, M.A. Khan^d, Shanawar Niaz^e and M.U.Rana^a
Journal of Magnetism and Magnetic Materials 395 (2015) 159-165
12. **Synthesis and characterization of hexagonal ferrite Sr_{1.8}Sm_{0.2}Co₂Ni_{1.50}Fe_{10.50}O₂₂/PST thin films for high frequency application.**
Irshad Ali^{a*}, M.U.Islam^a, Muhammad Naeem Ashiq^b, M.Asif Iqbal^{a,c}, Nazia Karamat^b, M. Azhar khan^d, **Imran sadiq***, Sana ijaz^b, Imran Shakir^f
Journal of Magnetism and Magnetic Materials 393 (2015) 352-356
11. **Temperature dependent magnetic and microwave absorption properties of doubly substituted nanosized material**
Imran Sadiq*^a, Shahzad Naseem^a, M.U.Rana^a, Muhammad Naeem Ashiq^b, Irshad Ali ^c
Journal of Magnetism and Magnetic Materials 385 (2015) 236–242
10. **Synthesis and magnetic properties of (Eu–Ni) substituted Y-type hexaferrite by surfactant assisted co-precipitation method**
Irshad Ali, M.U. Islam, **Imran sadiq**, Nazia Karamat, Aisha Iftikhar, M. Azhar khan, Afzal Shah, Muhammad Athar, Imran Shakir, Muhammad Naeem Ashiq
Journal of Magnetism and Magnetic Materials 85 (2015) 386–393
9. **Electrical Behavior of Tb-Mn Substituted Y-Type Hexa-ferrites for High-Frequency Applications**
Irshad Ali, M.U. Islam, Muhammad Naeem Ashiq, **Imran Sadiq**, Nazia Karamat, M. Azhar Khan, M. Ishaque. G. Murtaza, Imran Shakir and Zahoor Ahmad
Journal of Electronic Material 44 (2015) 1054-1061
8. **Influence of Sm-Mn Substitution on Structural, Dielectric and Electrical Properties of X-Type Hexagonal Nanoferrites**
Imran Sadiq, Irshad Ali, Evgeny V. Rebrov, M. Naeem Ashiq, Shahzad Naseem and M. U.Rana
Journal of chemical society of Pakistan 37 (2015) 33-38
7. **Nanosized Ce–Zn substituted microwave absorber material for X-band applications**
Imran Sadiq, Irshad Ali, Evgeny Rebrov, Shahzad Naseem, M. Naeem Ashiq, M.U. Rana
Journal of Magnetism and Magnetic Materials 370 (2014) 25–31
6. **High frequency dielectric properties of Eu⁺³-substituted Li–Mg ferrites synthesized by sol–gel auto-combustion method**
M. Asif Iqbal, M.U. Islam, Irshad Ali, Muhammad Azhar khan, **Imran Sadiq**, Ihsan Ali
Journal of Alloys and Compounds 586 (2014) 404–410
5. **Structural, infrared, magnetic and microwave absorption properties of rare earth doped X-type hexagonal nanoferrites**
Imran Sadiq, Imran Khan, Evgeny V. Rebrov, Muhammad Naeem Ashiq, Shahzad Naseem, M.U. Rana
Journal of Alloys and Compounds 570 (2013) 7–13
4. **Influence of Nd-Co Substitution on Structural, Electrical and Dielectric Properties of X-Type Hexagonal Nanoferrites**
Imran Sadiq, Irshad Ali, Evgeny V. Rebrov, Shahzad Naseem, M.Naeem Ashiq, and M.U. Rana
Journal of Materials Engineering and Performance DOI: 10.1007/s11665-013-0758
3. **Effect of Ce Substitution on Structural and Electrical Properties of W-type Strontium Hexaferrite Nanomaterials**
Imran Khan, Muhammad Naeem Ashiq, **Imran Sadiq**, Asheaq Mahmood Qureshi And Mazhar U Rana
Journal of chemical society of Pakistan, 34 (2012) 579-583
2. **Influence of rare earth Ce³⁺ on structural, electrical and magnetic properties of Sr²⁺ based W-type hexagonal ferrites**
Imran Sadiq, Imran Khan, Faiza Aen, M.U. Islam, M.U. Rana
Journal of Physica b 407 (2012) 1256–1261
1. **Role of Ce–Mn substitution on structural, electrical and magnetic properties of W-type strontium hexaferrites**

Research Supervision

PhD thesis completed: 02

Current Ph.D. Students: 04

Current M. Phil. Students: 06

Previous M.Phil. Students: 53

PhD Research titles

1. Synthesis of Hexagonal ferrites Nanoparticles and their Physicochemical Properties for Analytical Applications (**Sajjad Hussain-2024**)
2. Magnetically frustrated Iron Oxide based nanoparticles useful for Biomedical applications (**Mishal Idrees-2025**)

M. Phil. Research titles

1. Study of Structural, Optical, Electrical, Electrical polarization and Dielectric properties of rare earth element Pr substituted R-type hexagonal ferrites (**Abdul basit Javaid, 2018**)
2. Ni²⁺ doped R-type hexaferrites: Synthesis and Investigation of Structural, Optical, Electrical and Dielectric properties (**Tehmina Amjad, 2018**)
3. Effect of Rare Earth Elements (RE) substitution on structural, electric polarization and dielectric properties of R-type hexagonal ferrites synthesized via Sol-Gel method (**Syed Haseeb Shah, 2018**)
4. Influence of Ytterbium substitution on Structural, Electrical Polarization and Optical properties of β -ferrites (**Sajjad Hussain, 2019**)
5. Synthesis and Dielectric properties of rare earth element La³⁺ substituted β -ferrites (**Samreen Saeed, 2019**)
6. Magnetic Phase transition in rare earth elements substituted nano-sized R-type hexagonal ferrites useful for biomedical applications (**Mishal Idrees, 2019**)
7. Study of structural and Dielectric properties of Yb-substituted β -ferrites (**Syed Sameen Jan, 2019**)
8. Influence of Pr-Mn substitution of structural, Optical and Microwave absorption properties of X-type Hexagonal ferrites (**Ahsan Akhter, 2019**)
9. Structural, FTIR and Electrical polarization properties of La-substituted Potassium based β -ferrites (**Muhammad Shahbaz, 2019**)
10. Study of Structural, Thermal and Magnetic properties of Pr-Mn substituted Sr_{1-x}Pr_xCu₂Mn_yFe_{28-y}O₄₆ X-type Hexagonal ferrites (**Imran Khalid, 2019**)
11. Investigation of Paramagnetic and Superparamagnetic properties of Pr-substituted R-type Hexagonal ferrites (**M. Muzammil Hussain Butt, 2019**)
12. Influence of Ca-Substitution on Structural and Magnetic Properties of Sr-based R-type Hexagonal ferrites (**Nimra Idrees, 2020**)
13. To Study the Effect of Yb-Cu co-substitution on Structural, Thermal, Optical and Magnetic Properties of X-type Hexagonal Ferrites (**Abdul Rehman, 2020**)
14. Synthesis and Dielectric Properties of La³⁺-substituted M-type Hexagonal Ferrites (**Fateha Mubeen, 2020**)
15. Structural, Thermal and Anomalous Dielectric Properties of Pr-Cu Substituted X-type Hexagonal Ferrites (**Ayesha Islam, 2020**)
16. Role of Pr-Cu Substitution on Structural, Magnetic and FTIR properties of Strontium Based X-type Hexagonal Ferrites (**Mirza Azam Ul Haq, 2020**)
17. Influence of Ce³⁺ Substitution on Structural and Magnetic Properties of β -type Hexagonal Ferrites (**Zeeshan Hassan, 2020**)
18. Structural and Dielectric Properties of Vanadium Based Spinel Ferrites synthesized by Hydrothermal Technique (**Waseem Ahmad, 2020**)
19. To investigate the effect of Ytterbium substitution on Structural, DC electrical resistivity, Frequency dependent Permeability and Magnetic Properties of β - hexaferrites (**Zaheer Ahmad, 2020**)
20. Exploration of Structural, Magnetic and Frequency Dependent Permeability Properties of La-substituted M-type Hexagonal Ferrites (**Muhammad Aftab, 2020**)
21. Exploration of Structural and Magnetic properties of divalent Zn-substituted T-type hexagonal ferrites (**Faisal Abbas, 2021**)
22. Effect of Cerium substitution on Structural and Electrical Polarization properties of T-type Hexagonal Ferrites (**Muhammad Adnan Saeed, 2021**)
23. Study of Structural and Magnetic Properties of Mg Substituted Sr-based R-type Hexagonal Ferrites (**Sana Muhammad Din, 2021**)
24. Influence of Mg²⁺ substitution on Structural, Electrical Polarization and Optical Properties of Sr-based R-

- type Hexagonal ferrites (**Iqra Zahid, 2021**)
25. Investigation of Structural and Electrical Polarization Properties of Ca-substituted T-type Hexagonal Ferrites (**Sania Tanver, 2021**)
 26. Influence of V^{2+} substitution on Structural and Optical properties of R-type Hexagonal Ferrites (**Muhammad Abou Bakar, 2021**)
 27. Investigation of Structural, Electrical Polarization Properties and Surface Morphology of Zn^{2+} substituted T-type Hexagonal Ferrites (**Muhammad Adnan Saeed, 2021**)
 28. To study the Effect of Ca^{2+} substitution on the Structural, Optical and morphological Properties of T-type Hexagonal Ferrites (**Anam Maqsood, 2021**)
 29. Synthesis and Exploration of Structural, Morphological, Magnetic and Electrical Polarization Properties of Vanadium Ferrites (VFe_2O_4) (**Muhammad Raheel, 2021**)
 30. Investigation of Structural and Electrical Polarization Properties of Ni^{2+} substituted T-type Hexagonal Ferrites (**Muhammad Zeeshan, 2022**)
 31. Structural and Optical Properties of Praseodymium substituted T-type Hexagonal Ferrites (**Sadaf Naz, 2022**)
 32. Investigation of Structural and Electrical Polarization Properties Spinel (VFe_2O_4) and Hexagonal ($SrMn_2Fe_4O_{11}$) and their Nano-composite (**Imtiaz Fareed, 2022**)
 33. Investigation of Structural and Electrical Polarization Properties of Vanadium substituted T-type Hexagonal Ferrites (**Danesh Mahmood, 2022**)
 34. Influence of V^{2+} substitution on Structural and Dielectric properties of T-type Hexagonal Ferrites (**Qammar Abbas, 2022**)
 35. Study of Structural and Dielectric Properties of Spinel and Hexagonal Ferrites based Nano-composite (**Asad Abbas**)
 36. Effect of La^{3+} substitution on Structural and Dielectric properties of T-type Hexagonal Ferrites (**Abrar Hussain**)
 37. Exploration of Vanadium substitution on Structural and optical properties of T-type hexagonal ferrites (**Zubair Khan, 2022**)
 38. Study of Structural and Optical Properties of Neodymium substituted T-type Hexagonal Ferrites (**Muhammad Talha, 2023**)
 39. Determination of Structural and Magnetic characteristics of Neodymium substituted T-type Hexagonal Ferrites (**Mukhtiar Hussain, 2023**)
 40. Analysis of Structural and Electrical Polarization characteristics of GO and T-type Hexagonal Ferrites composite (**Abdullah Nabeed, 2023**)
 41. Analyzing the Structural and Electrical Polarization Properties of Neodymium substituted T-type Hexagonal Ferrites (**Nimra Ilyas, 2023**)
 42. Evolution of Structural and Electrical Polarization Properties of Gadolinium substituted R-type Hexagonal Ferrites (**Raja Hamza Arshad, 2023**)
 43. Structural and Optical Properties Graphene Oxide and T-type Hexagonal Ferrites and composite (**Ruqyya Aqeel, 2023**)
 44. Investigation of Structural and Electrical Polarization Properties of Gadolinium substituted V-type Hexagonal Ferrites (**Aamir Sohail, 2023**)
 45. Study of Structural and Electrical Polarization Properties of Samarium substituted V-type Hexagonal Ferrites (**Mishal Alamgir, 2023**)
 46. To study of structural and optical properties of Europium substituted T-type hexagonal ferrites (**Sana, 2024**)
 47. Exploration of structural and magnetic properties of $SrMnFe_8O_{15}/rGO$ composites (**Afzaal Khan, 2024**)
 48. Analysis of structural and optical properties of $SrMnFe_8O_{15}/rGO$ composites (**Alina Kanwal, 2024**)
 49. Revealing the structural and optical properties of $SrFe_8O_{14}/SiO_2$ composites (**Saba Sharif, 2024**)
 50. Study of structural and optical properties of $SrMn_2Fe_4O_{11}/rGO$ composites (**Laiba Laraib, 2024**)
 51. Investigation of structural and magnetic properties of Silicon Dioxide and T-type hexagonal ferrites (**Mehboob Ali, 2024**)
 52. Revealing the structural and Electrical Polarization properties of Europium substituted R-type hexagonal ferrites (**Hira Munawar, 2024**)
 53. Study of structural and magnetic properties of R-type/ rGO Nanocomposites (**Ghulam Hussain, 2024**)

Teaching Experience

May 2025 to DATE COE in Solid State Physics, University of the Punjab, Lahore, Pakistan (**Associate Professor**)

January, 2015 to May, 2025 COE in Solid State Physics, University of the Punjab, Lahore, Pakistan (**Assistant Professor**)

2013 to 2014 Bahauddin Zakariya University, Lahore Campus, Lahore, Pakistan (**Visiting Lecturer**)

2009 to 2012 NFC Institute of Engineering and Technology, Multan, Pakistan (**Visiting Lecturer**)

TEACHING COURSES (Undergraduate)

- Waves & Oscillations
- Electricity and Magnetism
- Basic Electronics
- Modern Physics

(M.Phil. and Ph.D. level)

- Chemical Synthesis of Nanostructures
- *Magnetism in Condensed Matter*
- Nanomaterial: A theoretical approach

LABORATORY COURSES (Undergraduate)

- Applied Physics lab
- Applied Physics and Mechanics lab

(M.Phil and Ph.D level)

- Chemical Synthesis and Simulation lab

International Conference Presentations

1. 2nd International conference on Applied Surface Sciences (ICASS'17) Dalian, China
2. International conference on materials and simulations in 2012 (BZU Multan)
3. International conference on materials simulations and modeling in 2013 (University of Malakand, KPK, Pakistan)
4. International Conference on Solid State Physics in 2013 (CSSP University of the Punjab, Lahore)
5. International Symposium on Advanced Materials (ISAM-2015)
6. International Conference on Solid State Physics in 2015 (CSSP University of the Punjab, Lahore)
7. Workshop on "Patent filling & Introduction to Intellectual property System of Pakistan" in 2017, University of the Punjab, Lahore
8. International Conference on Solid State Physics in 2017 (CSSP University of the Punjab, Lahore)
9. International Symposium on Condense Matter Physics in 2018, The Women University Multan, Pakistan
10. Workshop on "Development of Youth" in April, 2018, University of Sargodha, Bhakkar Campus, Bhakar
11. Symposium on Dielectrics & High Frequency Microwave Materials (December 11-12, 2018), Pakistan Institute of Nuclear Science & Technology (PINSTECH) Nilore, Islamabad
12. 16th International Symposium on Advanced Materials (October 21-25, 2019) Pakistan Advanced Material Forum, National Centre for Physics, Quid e Azam University, Islamabad.
13. International Conference on Solid State Physics in 2019 (CSSP, University of the Punjab, Lahore)
14. International conference on semiconductor materials 2020 (KFUEIT, Rahim Yar Khan, Pakistan)
15. 1st International Conference on Emerging Trends of Inter-Disciplinary Research in Biomedical Sciences
16. 2nd International conference on Advances in Materials Science, 5,6 October, 2021 (University of Education, Lahore)
17. International conference on semiconductor materials 2021 (KFUEIT, Rahim Yar Khan, Pakistan)
18. International Conference on Solid State Physics in 2021 (CSSP, University of the Punjab, Lahore)
19. 1st International Conference on Emerging Trends in Physics, 23-24 May, 2022 (Institute of Physics, The Islamia University of Bahawalpur, Bahawalpur, Pakistan)
20. 2nd International conference on Physical Sciences and Engineering, 14-16 December, 2022 (Khawaja Fareed University of Engineering and Information technology, Rahim Yar Khan)
21. International Conference on Sustainable development in Nanotechnology, 20-21 March, 2023, University of Sindh, Jamshoro, Pakistan
22. 4th iiScience International conference, Recent Advances in Photonics & Physical Sciences, April 16-18, 2024, Department of Physics, Lahore College for Women University, Lahore, Pakistan
23. 2nd International Conference on Emerging Trends in Physics (ICP-2025) April 14-15, 2025, at UMT Lahore
24. 4th International Conference on recent trends in Natural Science, (RTNS-2025), April 22-23, University of Education Jauhar abad Campus, Jauhar abad, Paksitan.
25. 6th International conference on Advances in Materials Science, 3-4 December, 2025 (University of

Education, Lahore)

Conference Proceedings

- *Synthesis and characterization of rare earth elements substituted X-type hexagonal ferrites*
Imran Sadiq, Mazhar ud Din Rana, Shahzad Naseem
Materials Today: Proceedings 2 (2015) 5462–5467

Computer Skills towards Scientific Research

- I am skilled in following **Computer Software** which can be used for Scientific Research:
Microsoft Office, EndNote, Adobe Acrobat, Origin etc.

Reviewer of Scientific Journals

1. Journal of American Ceramic Society
2. Journal of Alloys and Compounds
3. "Vacuum" Journal
4. Journal of Materials Science: Materials in Electronics
5. International Journal of Energy Research
6. Surfaces and Interfaces
7. Journal of European Ceramic Society
8. Journal of Inorganic Chemistry Communication
9. Journal of computational methods in sciences and engineering
10. Journal of Physics and Chemistry of Solids
11. Heliyon, Journal
12. Materials Today Communications
13. Journal of rare Earths
14. Materials Chemistry and Physics
15. Ceramics International
16. Journal of Energy Storage

Departmental responsibilities

- Working as lab in charge of "Process lab" in COE in Solid State Physics , University of the Punjab, Lahore, Pakistan
- Working as member of Security Committee in COE in SSP
- Working as member of Anti-Dengue committee in COE in SSP
- Working as member of admission committee
- Working as member of PhD synopsis evaluation Committee
- Working as Student advisor in COE in SSP
- Working as focal person of hostels in COE in SSP
- Working as student advisor
- Working as member of departmental disciplinary committee
- Working as member of departmental harassment committee
- Working as Controller of Examination of BS programs

Editorial activities

- Worked as Guest editor of "*Frontiers in Materials*" journal in the field of "*Superparamagnetic materials and their biomedical applications*".

Other Particulars

- Won a **Research Grant** (under Startup Research Grant Program) of value ~**0.5 million PKR** from HEC for IPFP Project at Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan, in 2015.
- Acquire a research grant from University of the Punjab through "Punjab University Research Program" on a project entitled "Hydrothermal synthesis of divalent/trivalent elements substituted V-type hexagonal ferrites for advanced applications" in 2023-2024.
- Acquire another research grant from University of the Punjab through "Punjab University Research Program" on a project entitled "Synthesis of T-type hexagonal ferrites and their hyperthermia applications" in 2024-2025.
- Life Member of Pakistan Institute of Physics (**PIP**)

- Member, Zakariyan Alumni Association of Physicist (ZAAP), B.Z.U, Multan

References

- Prof. Dr. Evgeny V. Rebrov
School of Engineering, University of Warwick, UK
Email: e.rebrov@warwick.ac.uk
- Dr. Robert Carlyle Pullar
Department of Molecular Sciences and Nanosystems
Ca' Foscari University of Venice, Venice, Italy
Email: robertcarlyle.pullar@unive.it
- Prof. Dr. Shanawer Niaz
Institute of Physics, Khawaja Fareed University of Engineering and Information technology
Rahim Yar Khan, Pakistan
Email: shanawersi@yahoo.com

