

## Shahid Atiq

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University of the Punjab, Lahore-54590, Pakistan

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### EDUCATION

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**Doctorate of Philosophy**, Solid State Physics, November 2009

University of the Punjab, Lahore, Pakistan

Dissertation: Preparation of Giant Magnetic Moment Materials of Iron Nitride Related Compounds

Supervisor: Professor Saadat Anwar Siddiqi

Acknowledgement: Higher Education Commission of Pakistan (Indigenous 5000-PhD Fellowship)

**Master of Science**, Physics, 1994, University of the Punjab (Govt. T.I. College Chenab Nagar)

**Bachelor of Science**, Physics, Math A & B, 1992, University of the Punjab (Govt. Murray College, Sialkot)

### ACADEMIC / RESEARCH EXPERIENCE

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**Assistant Professor (TTS)**

Centre of Excellence in Solid State Physics, University of the Punjab, Lahore

**Feb. 06, 2013 - Present**

**Assistant Professor/Sr. Research Associate**

Centre of Excellence in Solid State Physics, University of the Punjab, Lahore

**Sep. 01, 2010 - Feb. 05, 2013**

**Postdoc Physicist**

Department of Physics, School of Science and Engineering (SSE),

Lahore University of Management Sciences (LUMS), Lahore

**Jul. 01, 2009 - Aug. 31, 2010**

### FOREIGN RESEARCH EXPERIENCE

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- Worked at Centre for Nanospinics of Spintronic Materials (CNSM) at Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea from Mar. 2007 to May 2008.  
**Acknowledgement:** International Research Support Initiative Program (IRSIP) of Higher Education Commission of Pakistan and Korean Science Education Fund (KOSEF) through National Research Projects (NRP) of Government of Korea (Courtesy: Prof. Dr. Sung-Chul Shin)
- Worked at Nanospintronic and Magnetic Materials Lab. in the Department of Materials Science at Gwangju Institute of Science and Technology (GIST), South Korea from 26<sup>th</sup> August 2008 to 25<sup>th</sup> November 2008.  
**Acknowledgement:** GIST Foreign Internship Program (Courtesy: Prof. Dr. Beong-Ki Cho)

### COURSES TAUGHT TO M.PHIL./PH.D. STUDENTS

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- Magnetism in Condensed Matter
- X-ray Diffraction
- Semiconductor Electronic Devices
- Laboratory Work (M.Phil Solid State Physics)
- Semiconductor Nanostructures and Optoelectronic Devices
- Physical Fabrication and Characterization Lab.

## RESEARCH INTERESTS

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- Experimental Solid State Physics Covering
  - Crystallography
  - Magnetic Materials
  - Dilute Magnetic Semiconductors
  - Multiferroics
  - Dielectric Characteristics
  - Thin Films and nanoparticle synthesis

## EQUIPMENT USED/HANDLED

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- Main equipment used during PhD and professional carrier are
  - DC/RF Magnetron Sputtering
  - Vibrating Sample Magnetometer
  - Magneto-Optical Microscope Magnetometer
  - X-Ray Diffractometer
  - Atomic force/optical microscopes
  - Impedance Analyzer
  - Probe Station
  - Fourier Transform Infrared Spectroscopy
  - Wet-chemical synthesis tools
  - Muffle and tube furnaces

## M.PHIL. STUDENTS SUPERVISED

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1. Muhammad Javid 2011  
Synthesis and characterization of structural, electrical and magnetic properties of NiO nanoparticles
2. Zaka-Ullah 2012  
Synthesis and characterization of Pb doped Sr-Ferrites
3. Muhammad Azim 2012  
Auto-combustion synthesis and characterization of La-doped Sr-Ferrites
4. Fouzia Altaf 2012  
Optimizing the preparation conditions for Sol-Gel synthesis of Co-substituted Sr-Ferrites
5. Muhammad Zaka Ansar 2013  
Synthesis of iron oxide nano-crystallites for targeted anti-cancer drug delivery
6. Majid 2013  
Synthesis and characterization titanium oxide nano-particles for photo-catalytic applications
7. Mirza Khurram Baig 2013  
Structural, electrical and magnetic characterization of SmCo thin films
8. Muhammad Umair Farooq 2013  
Pulsed laser deposition of SmCo thin films for high density magnetic recording media
9. Usman Asghar 2014  
Effect of Co substitution on structural, morphological and dielectric properties of  $Ba_{0.2}Bi_{0.8}Fe_{1-y}Co_yO_3$  ( $y = 0.0, 0.01, 0.02$  &  $0.03$ )
10. Muhammad Junaid 2014  
Effect of Zn substitution at the Mg-site on structural, compositional, morphological and dielectric properties of  $Mg_{1-x}Zn_xAl_2O_4$  ( $x = 0.0, 0.2, 0.4, 0.6, 0.8$  &  $1.0$ )
11. Tanveer Hussain 2014  
Structural refinement, optical, electrical and impedance analysis of Zn substituted  $Zn_xMg_{1-x}Al_2O_4$
12. Muhammad Azam 2014  
Fabrication and Characterization of  $XAl_2O_4$  ( $X=Mg, Zn, Ni$ ) Nanoparticles by Sol-gel Method
13. Muhammad Fayyaz 2014  
Structural and Dielectric Characterization of  $XAl_2O_4$  Spinel ( $X = Mg, Zn, Ni$ )
14. Ali Kamran 2014  
Preparation and Characterization of Ba doped  $BiFeO_3$  Multiferroic
15. Ayesha Khalid 2015  
Effect of (Mn,Cu) co-doping on structural, morphological, magnetic & dielectric properties of  $BiFeO_3$
16. Maria Majeed 2015  
Phase-pure synthesis to investigate the influence of Zn-substitution at Ni-site in nickel ferrites
17. Omer Arif 2015

- Effect of sintering temperature on structural, morphological, dielectric and magnetic properties of barium hexaferrite nanocrystallites
18. Sidra Zawar 2015  
Analysis of structural, magnetic and dielectric properties of Mn-substituted Zn ferrites
  19. Syed Kumail Abbas 2015  
Structural optimization of SrMnO<sub>3</sub> to study electro-magnetic properties
  20. Hafiz Muhammad Amir 2015  
Influence of Ba-substitution at Sr-site on the structural, surface morphological, electrical and magnetic properties of SrMnO<sub>3</sub>
  21. Muhammad Furqan 2015  
Effect of Mn doping (at Zn-site) on structural, morphological, dielectric and magnetic properties of Zn<sub>0.95</sub>Fe<sub>0.05</sub>O nanocrystallites
  22. Hafiz Hamza Assi 2016  
Band gap optimization of Co-ferrite via Mg-substitution: Recyclable magnetic photocatalyst for the reduction of methylene blue and degradation of toxic dyes
  23. Zahoor Ahmad 2016  
Structural and complex impedance spectroscopic studies of Mg-substituted CoFe<sub>2</sub>O<sub>4</sub>
  24. Maryam Ali 2016  
Crystalline phase formation of PbTiO<sub>3</sub> by varying calcination temperature to study microstructure and dielectric characteristics
  25. Aqsa Ahmad 2016  
Effect of Fe-doping on structural, morphological, and dielectric properties of lead titanate
  26. Safeera Zaineb 2016  
Structural, compositional, and impedance spectroscopic characterization of Mn-doped Zn<sub>0.95</sub>Fe<sub>0.05</sub>O
  27. Muhammad Adnan Aslam 2016  
Synthesis and multiferroic characterization of Ba-substituted SrMnO<sub>3</sub>
  28. Muhammad Burhan Shafqat 2016  
Synthesis and comparison of structural, morphological and dielectric properties of XCr<sub>2</sub>O<sub>4</sub> (X = Zn, Mn, Cu & Fe) spinel nanoparticles
  29. Adnan Afzal 2016  
Structural and magnetic phase transition of Cr<sub>2</sub>O<sub>3</sub> nanoparticles by Mn incorporation
  30. Muhammad Sajid Shafiq 2016  
Influence of Mn-substitution (at Zn-site) on the structure, morphology and dielectric properties of ZnCr<sub>2</sub>O<sub>4</sub> nanoparticles
  31. Samina Nazli 2016  
Investigation of dielectric and ferroelectric properties of Cr<sub>2</sub>O<sub>3</sub> and MnCr<sub>2</sub>O<sub>4</sub>
  32. Adyan Fatima 2017  
Magnetoelectric characterization of Ni and Cr co-doped BiFeO<sub>3</sub> nano crystallites
  33. Ali Haider Khan 2017  
Pursuing an optimized Mn substituted BiFeO<sub>3</sub> as potential magnetodielectric material for use in ultimate memory devices
  34. Komal Nayab 2017  
Effect of Ba/Co co-doping on the morphological and multiferroic properties of BiFeO<sub>3</sub>
  35. Mahvish Khalid 2017  
Effect of Ni/Cr co-doping on morphological and dielectric properties of BiFeO<sub>3</sub>
  36. Maida Tabbasum 2017  
Morphological and magneto-dielectric studies of Mg-substituted CoFe<sub>2</sub>O<sub>4</sub>
  37. Moin Ahmad Khan 2017  
Optimization of structural, dielectric and magneto-dielectric characteristics of La-substituted BiFeO<sub>3</sub>
  38. Muhammad Faizan 2017  
Multiferroic characteristics of La-substituted BiFeO<sub>3</sub>
  39. Muhammad Haris 2017  
Acetylene black coated V<sub>2</sub>O<sub>5</sub> nanocomposite with stable cyclability lithium-ion batteries cathode
  40. Muhammad Safyan 2017  
Multiferroic characterization of (1-x)BiFeO<sub>3</sub>-xPbTiO<sub>3</sub>
  41. Muhammad Younas 2017

- Magneto-dielectric characteristics and magnetic phase transition of  $ACr_2O_4$  (A= Fe, Co and Ni)
42. Sahar Fazal 2017  
Structural and dielectric study of nanocrystalline (Ba, Co) co-doped bismuth ferrite
43. Singhay Ali 2017  
Morphological analysis of BiFeO<sub>3</sub>-PbTiO<sub>3</sub> composites and its dielectric properties

### **M.PHIL. STUDENTS CURRENTLY UNDER SUPERVISED**

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|------------------|---------------------------|
| 1. Muhammad Ali  | 5. Muhammad Arshad        |
| 2. Ali Hassan    | 6. Maryam Hassan          |
| 3. Abdul Ghaffar | 7. Muhammad Salman Kiayni |
| 4. Usman Mushtaq |                           |

### **PH.D. STUDENTS CURRENTLY UNDER SUPERVISED**

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|----------------------------|----------------------|
| 1. Ghulam Muhammad Mustafa | 3. Syed Kumail Abbas |
| 2. Ayesha Khalid           | 4. Sidra Zawar       |

### **ADMINISTRATIVE/ADDITIONAL RESPONSIBILITIES**

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- Incharge Library, Centre of Excellence in Solid State Physics
- Controller of Examinations, Centre of Excellence in Solid State Physics
- In-charge Timetable, Centre of Excellence in Solid State Physics
- Member, Scholarship Award Committee, Centre of Excellence in Solid State Physics
- Member Board of Studies (BoS), Centre of Excellence in Solid State Physics
- Member Board of Studies (BoS), Department of Physics, University of the Punjab
- Member Board of Studies (BoS), Faculty of Science, University of the Punjab, Lahore
- Departmental Focal Person, Hostel allotment, University of the Punjab, Lahore
- Departmental Focal Person, PM Laptop Scheme, University of the Punjab, Lahore
- Departmental Focal Person, PEEF/HEC need-based scholarships, UoP, Lahore

### **RESEARCH PROJECTS**

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- Sol-Gel auto-ignition synthesis of  $Bi_{0.9}La_{0.1}FeO_3$  and  $PbFe_xTi_{1-x}O_3$  and investigation of magnetoelectric coupling in their solid solution (Worth: 11.160,104 million Rs.) granted under National Research Program for Universities (NRPU) of HEC, Pakistan 2014 - 2017

### **MEMBERSHIPS**

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- Life time member of
  - Pakistan Institute of Physics (PIP)
  - Member Organizing Committee International Conference on Solid State Physics-2013, 2015 and 2017
  - Khwarizmi Science Society (KSS)

### **REVIEWER OF INTERNATIONAL JOURNALS**

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- Journal of Alloys and Compounds
- Ceramics International
- Journal of Materials Science
- Journal of Materials Science-Materials International
- Superlattices and Microstructures
- Journal of Sol-Gel Science and Technology
- Journal of Saudi Chemical Society.
- Materials Letters