

HASSAN SIDDIQUE

RESEARCH INTERESTS

- Optoelectronic properties of Halide Perovskites for light emitting devices
- Nucleation and Crystallization of Perovskite Materials at the Nano-regime
- Synthesis of Perovskites by different methods
- Structural and Photo-physical investigations with different synthesis techniques at ambient conditions and at extreme conditions (High/low temperature , High Pressure)

DETAILED DESCRIPTION OF EDUCATIONAL BACKGROUND

Two Years working as Research and Development expert at COREACH Hefei

China from 2020/09/03 to 2022/08/25

Ph.D. Physics

December 2020

University: University of Science and Technology China Hefei, Anhui

Thesis: Synthesis and optoelectronic properties of lead-free halide perovskite

$\text{Cs}_2\text{AgInCl}_6$

Advisor: Prof. Dr.Zhang Zengming

Language course: One year language Course

Year of Study 01 September 2014 to 01 July 2015

University Anhui Normal University Wuhu Anhui

Degree: **M.Phil (Master of Philosophy in Physics)**

University: Bahauddin Zakariya University Multan.

Major Subjects: Research Methods, Mathematical Methods of Physics, Solid State Physics

Thesis : A Density Functional Theory Study of Raman Modes of Potassium Intercalated Cadmium Hexathiohypodiphosphates

Degree: **M.Sc (Physics)**

University	Bahauddin Zakariya University Multan.
Optional Subjects:	Electronics, Mathematical Physics, Fundamental of Classical Mechanics and Quantum Mechanics
Degree:	B.Sc
University	University of Azad Jammu and Kashmir
Optional Subjects:	Math A, Math B, Physics
Degree:	F.Sc (Higher Secondary School Certificate)
Institute	BISE Mirpur Azad Kashmir
Major Subjects:	Physics, Chemistry and Mathematics
Degree:	Matric (Secondary School Certificate)
Institute	BISE Mirpur Azad Kashmir
Major Subjects:	Physics, Computer Science, Chemistry and Mathematics

Publication and Research:

- Anomalous Octahedron Distortion of Bi-Alloyed $\text{Cs}_2\text{AgInCl}_6$ Crystal via XRD, Raman, Huang–Rhys Factor, and Photoluminescence <https://doi.org/10.1021/acs.jpcllett.0c02852> (JPCL)
- An Enhanced PEC Water Splitting Performance of Silver Nanoparticles Coated CdS Nanowires Photo anode: The Role of Silver Deposition <https://doi.org/10.1021/acs.jpcc.0c11332> (JPCC)
- A Density Functional Theory Study of Raman Modes of Cadmium Hexathiohypodiphosphate (CdPS_3) <https://doi.org/10.1515/msp-2015-0041>
- Pressure-induced Anomalous Emission Behaviors of MnS/ZnS Quantum Dots <https://doi.org/10.1021/acs.jpcc.1c01160> (JPCC)

Patent:

1. Synthesis and x-ray detection properties of new scintillator material

Status: Registered at China Science Council

Scientific Talks and Conferences:

25-26 oct.2019	Band gap engineering and Optical properties of Lead free Halide Perovskites , Doctoral forum sun- island International Material Forum Herbin
November 14-18	Interface and Phase translations of HfO_2 films on Si substrate after thermal annealing Conference of Semiconducting materials Nanning China
2017	
March 16-20, 2015.	A Density Functional Theory Study of Raman Modes of Cadmium Hexathiohypodiphosphate (CdPS_3) International Scientific Spring (ISS) in Islamabad, Pakistan

DISTINCTIONS:-

➤ **Participation in Various activities at USTC**

Besides the research work at USTC actively participated in sports and other social activities and won a number of certificates.

- **Visit Peoples Republic of China as a part of National Youth Delegation**
During His speech Prime minister of Pakistan Shaukat Aziz in National Youth Convention Islamabad announced the visit of the Peoples Republic of China for 1st 30 students of the convention. I made the debate on Education System of Pakistan and Stood 1st. This was 15 days visit in which we visited Beijing and Shanghai.
- **Best Debater of AJ&K 2005**
This competition was organized by AJ&K scout organization. The topic of competition was about Seerat-Ul-Nabi
- **Participated the National Youth Convention Islamabad(2005)**
National Youth Convention was organized by Ministry of Youth Culture and sports affair. I represented district Bhimber(Azad Kashmir) on this occasion. It was multi-activities plat form to discuss various social and economic problems of Pakistan.
- **Editor Of College Magazine (Patan)**
After a written competition I was elected as Editor of PATAN. As an Editor I also give input on Poetry and Research article.
- **Winner of 100,400 meter Race at AJ&K University**
In Annual games of the University of AJ&K, I participated as an athlete. In various games, I stood at winning stand.
- **Vice President of Literary Society of BZU Multan**
During my MSc, I was Vice President of Literary Society of BZU Multan. This plate form encircles various literary activities at University.
- **Member of Zakarian Debating Society**
As a member of this society, I organized various debating competition in University.
- **Member of body who 1st time organized MINI MARATHON Race at BZU Multan**
BZU Multan took a step to organize MINI MARATHON Race at the campus I was an active member of the body who organized this race.
- **Write a research paper about Sardaar Ibraheem and got special prize**
Sardaar Ibraheem was 1st President of Azad Jammu & Kashmir. At His death anniversary, I wrote a research paper about His whole life which covers His struggle for Independence and establishment of Base Camp.