

Banat Gull

Associate Professor

Military College of Engineering

Email: banatgul@mce.nust.edu.pk

Contact: 000000000

LinkedIn: <https://www.linkedin.com/in/banat-gul-84612792/>



About

Dr. Banat Gull is working as Associate Professor in the Military College of Engineering. Dr. Banat Gull has a PhD in Computational Physics. Dr. Banat Gull has published 101 research articles & conference papers having a citation count of 715, carried out 0 projects and filed 0 intellectual property.

Qualifications

PhD in Computational Physics Pakistan Institute of Engineering and Applied Sciences (PIEAS) , Pakistan	2010 - 2016
MPhil in Physics Quaid-i-Azam University , Pakistan	2007 - 2009
MSc in Physics University of Peshawar , Pakistan	2005 - 2005
BSc in Physics, Math, Computer University of Peshawar , Pakistan	1998 - 2001

Experience

Associate Professor Military College of Engineering	2022- Present
Associate Professor Military College of Engineering	2021 - 2022
Assistant Professor Military College of Engineering	2020 - 2021
Assistant Professor Riphah International University Lahore , Riphah International University Lahore	2019 - 2020
Assistant Professor UOL-Lahore , Department of Physics, UOL, Sargodha Campus, Sargodha	2018 - 2019
Assistant Professor IIU-Islamabd , Department of Physics, IIUI,H-12, Islamabad	2017 - 2018
Assistant Professor QAU, Islamabad , QAU, Islamabad	2016 - 2017

Research Articles

Electronic structure and multifunctional properties of novel GaChCl (Ch = Se, Te) ternary chalcogenides: Insights from first-principles calculations <i>Banat Gull Safia Abdullah R Alharbi Muhammad Salman Khan Siti Maisarah Aziz</i> <i>Chemical Physics Letters</i> , Volume:878, Article Number 142344 Impact Factor: 3.100 Quartile: 2 DOI: https://doi.org/10.1016/j.cplett.2025.142344	2025
Exploring the impact of Sc and Y substitution on the physical properties of novel quaternary chalcogenides: A first-principles insight <i>Mohannad Al-Hmoud Banat Gull Muhammad Salman Khan Ghlamallah Benabdellah Zia Ullah Ayed M. Binzowaimil Siti Maisarah Aziz</i> <i>Chemical Physics Letters</i> , Volume:877, Article Number 142311 Impact Factor: 3.100 Quartile: 2 DOI: https://doi.org/10.1016/j.cplett.2025.142311	2025

First principle study of the optoelectronic, and thermoelectric properties of novel direct band gap ternary chalcogenides <i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Gulzar Khan Siti Maisarah Aziz Ghlamallah Benabdellah Ayed M. Binzowaimil</i> <i>Physica B: Condensed Matter</i> , Volume:714, Article Number 417528 Impact Factor: 2.800 Quartile: 2 DOI: https://doi.org/10.1016/j.physb.2025.417528	2025
Chalcogen-mediated band tuning, optoelectronic and transport properties of LaCuXO (X = Se, Te) Oxychalcogenides: First-principles study <i>Banat Gull Safia Abdullah R Alharbi Muhammad Salman Khan Siti Maisarah Aziz</i> <i>Chemical Physics Letters</i> , Volume: 878, Article Number: 142248 Impact Factor: 3.1 Quartile: 1 DOI: https://doi.org/10.1016/j.cplett.2025.142248	2025
First principles calculation of optoelectronic, elastic, and thermoelectric properties of Ga₂HgX₄ (X = Se, Te) ternary chalcogenides <i>Abdelhay Salah Mohamed Banat Gull Muhammad Salman Khan Ghlamallah Benabdellah Siti Maisarah Aziz Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 876, Article Number 142233 Impact Factor: 3.100 Quartile: 2 DOI: https://doi.org/10.1016/j.cplett.2025.142233	2025
Unveiling the optoelectronic and thermoelectric properties of Cs₂HgM (M = Se, Te) semiconductors for sustainable optoelectronic technologies <i>Abdelhay Salah Mohamed Banat Gull Muhammad Salman Khan Siti Maisarah Aziz Hijaz Ahmad</i> <i>Inorganic Chemistry Communications</i> , Volume 179, Part 2, Article Number 114837 Impact Factor: 5.400 Quartile: 1 DOI: https://doi.org/10.1016/j.inoche.2025.114837	2025
Unveiling the optoelectronic and thermoelectric properties of YAgCh₂ (Ch = Se, Te): First-principles study <i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Siti Maisarah Aziz Ghlamallah Benabdellah Ayed M. Binzowaimil</i> <i>Inorganic Chemistry Communications</i> , Volume 179, Part 1, Article Number 114684 Impact Factor: 4.400 Quartile: 1 DOI: https://doi.org/10.1016/j.inoche.2025.114684	2025
Unveiling the potential of rare-earth XCuSeO (X = Dy, Sm) oxychalcogenides for high-performance UV shielding and photovoltaics <i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Siti Maisarah Aziz</i> <i>Journal of Solid State Chemistry</i> , Volume 348, Article Number 125389 Impact Factor: 3.2000 Quartile: 2 DOI: https://doi.org/10.1016/j.jssc.2025.125389	2025
Systematic Exploration of Electronic, Optical, and Thermoelectric Properties of SrCuXF (X = S, Se) Materials: Employing First-Principles Calculations <i>Abdelhay Salah Mohamed Banat Gull Muhammad Salman Khan Ghlamallah Benabdellah Siti Maisarah Aziz Faheem Abbas</i> <i>Brazilian Journal of Physics</i> , Volume:55, Article Number:224, Pages:15 Impact Factor: 1.7 Quartile: 3 DOI: https://doi.org/10.1007/s13538-025-01853-3	2025
Exploring the optoelectronic, elastic, and transport properties of XSbTe₃ (X = Dy, Sm) for next-generation energy materials: A first-principles study <i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Siti Maisarah Aziz</i> <i>Chemical Physics Letters</i> , Volume:871, Article Number 142123 Impact Factor: 2.800 Quartile: 1 DOI: https://doi.org/10.1016/j.cplett.2025.142123	2025
Exploring the potential of TlInX₂ (X = Se, Te) materials: First-principles investigation for the optoelectronic and thermoelectric applications <i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Siti Maisarah Aziz</i> <i>Chemical Physics Letters</i> , Volume:869, Article Number 142069 Impact Factor: 2.800 Quartile: 1 DOI: https://doi.org/10.1016/j.cplett.2025.142069	2025
A comparative DFT study of different structures of ZnTe: for optoelectronic and thermoelectric applications	2025

<i>Banat Gull Mohannad Mahmoud Ali Al-Hmoud Muhammad Salman Khan Siti Maisarah Aziz</i> <i>RSC Advances</i> , Volume:15, Issue:20, Pages 15550-15560 Impact Factor: 3.900 Quartile: 2 DOI: https://doi.org/10.1039/D5RA01399B	
A computational study of novel CsYSe₃ (M = Cd, Zn) materials: for their potential optoelectronic and thermoelectric application <i>Muhammad Salman Khan Banat Gull Siti Maisarah Aziz Abdelhay Salah Mohamed Faheem Abbas</i> <i>Modelling and Simulation in Materials Science and Engineering</i>, Volume:33, Issue:2, Article Number 025005 Impact Factor: 1.900 Quartile: 3 DOI: https://doi.org/10.1088/1361-651X/ada81d	2025
Exploring the impact of chalcogen substitution in novel ternary chalcogenides: insight from first-principles investigation <i>A S Mohamed Banat Gull Muhammad Salman Khan S M Aziz H Ahmad F Abbas</i> <i>Indian Journal of Physics</i>, Pages 1-13 Impact Factor: 1.600 Quartile: 2 DOI: https://doi.org/10.1007/s12648-025-03572-6	2025
First-Principles Study of Electronic Structure, Optical and Thermoelectric Properties of Quaternary Chalcogenides <i>Abid Raza Banat Gull Muhammad Salman Khan Ahmad A. Ifseisi Siti Maisarah Aziz Xiaoliang Zhang Saleh Muhammad</i> <i>Journal of Inorganic and Organometallic Polymers and Materials</i>, Pages:13 Impact Factor: 3.900 Quartile: 2 DOI: https://doi.org/10.1007/s10904-025-03664-0	2025
Investigating the electronic structure, elastic, optical, and thermoelectric nature of novel As₂X (X = S, Se, Te) ternary chalcogenides <i>Muhammad Salman Khan Banat Gul ABDELHAY SALAH MOHAMED Gulzar Khan Siti Maisarah Aziz Faheem Abbas</i> <i>Physica B : Condensed Matter</i>, Volume: 697, Article Number: 416696 Impact Factor: 2.88 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1016/j.physb.2024.416696	2025
Electronic Structure, Optical and Thermoelectric Properties of Novel Rb₂XAgF₆ (X = Ga and In) halide-based Perovskites <i>Muhammad Salman Khan Banat Gull Zia Ullah Ahmad A. Ifseisi Siti Maisarah Aziz Faheem Abbas</i> <i>Journal of Inorganic and Organometallic Polymers and Materials</i>, Pages: 13 Impact Factor: 3.9 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1007/s10904-024-03579-2	2025
Insight into the optoelectronic and thermoelectric properties of novel LaSeM (M = Cl, F) chalcogenides: ab-initio study <i>Muhammad Salman Khan Banat Gull Abdelhay Salah Mohamed Siti Maisarah Aziz Faheem Abbas</i> <i>Physica scripta</i> , Volume: 100, Number: 1, Article Number:015999 Impact Factor: 2.6 Quartile: 2 DOI: https://doi.org/10.1088/1402-4896/ad9ef9	2024
The electronic, optical and transport properties of BaAgMF (M = Se, Te) quaternary chalcogenides: a systematic first-principles study <i>Muhammad Salman Khan Banat Gull Abdelhay Salah Mohamed Faheem Abbas</i> <i>Physica scripta</i> , Volume:100, Number:01, Article Number:015968 Impact Factor: 2.6 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1088/1402-4896/ad9bfa	2024
Ab initio study of multifunctional novel CsErZnM₃(M = Se, Te) chalcogenides: potential materials for UV protection and energy harvesting <i>Muhammad Salman Khan Banat Gull Abdelhay Salah Mohamed Siti Maisarah Aziz Hijaz Ahmad Faheem Abbas</i> <i>Physica scripta</i> , Volume:100, Number:01, Article Number:015944 Impact Factor: 2.6 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1088/1402-4896/ad9965	2024
First-principles study of novel CuAgX (X = S, se) semiconductors: Probing electronic, optical, thermodynamic, and thermoelectric properties <i>Muhammad Salman Khan Banat Gul Gulzar Khan Abdelhay Salah Mohamed Faheem Abbas</i> <i>Materials Science in Semiconductor Processing</i>, Volume 184 , Article Number 108810	2024

Impact Factor: 4.200 Quartile: 2 Citations: 4 DOI: https://doi.org/10.1016/j.mssp.2024.108810	
Exploring novel Zn₂SeX (X=S, Te) ternary chalcogenide: Studying the effect of chalcogen substitution on optoelectronic, and thermoelectric performance <i>Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Siti Maisarah Aziz Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 856, Article Number 141626 Impact Factor: 2.800 Quartile: 1 Citations: 4 DOI: https://doi.org/10.1016/j.cplett.2024.141626	2024
Electronic, optical, and thermoelectric efficiency of novel Li-based ternary chalcogenides: First-principles study <i>Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Siti Maisarah Aziz Ghlamallah Benabdellah Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 855, Article Number 141565 Impact Factor: 2.800 Quartile: 1 Citations: 1 DOI: https://doi.org/10.1016/j.cplett.2024.141565	2024
Investigation of optoelectronic and magnetic properties of novel Ba₂UXO₆ (X = Co, Mn) double perovskites: For ecological advance energy applications <i>Ahmad Ali Banat Gul Muhammad Salman Khan Abdelhay Salah Mohamed Gulzar Khan Muhammad Ali Maaz Ahmad Faheem Abbas</i> <i>Materials Science in Semiconductor Processing</i> , Volume 183, Article Number 108747 Impact Factor: 4.200 Quartile: 2 Citations: 5 DOI: https://doi.org/10.1016/j.mssp.2024.108747	2024
Exploring the physical properties of novel ACu₃S₃ (A = Sc, Y) semiconductors via first-principles calculation <i>Muhammad Salman Khan Banat Gul Gulzar Khan Ghlamallah Benabdellah Bashir Ahmad Munirah D. Albaqami Saikh Mohammad Md Khalid Auranzeb Hijaz Ahmad</i> <i>Materials Science in Semiconductor Processing</i> , Volume 182 , Article Number 108696 Impact Factor: 4.200 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1016/j.mssp.2024.108696	2024
The electronic structure, optical, and transport properties of novel SrScCu₃M₄ (M = Se, Te) semiconductors <i>Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Faheem Abbas</i> <i>Physica Scripta</i> , Volume 99, Number 11, Article Number 115999 Impact Factor: 2.600 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1088/1402-4896/ad87bc	2024
First-Principles study of the electronic Structure, Optical, and thermoelectric properties of novel WSeX (X=S, Te) Chalcogenides: For energy harvesting application <i>Muhammad Salman Khan Banat Gul Hussain Ahmad Abdelhay Salah Mohamed Siti Maisarah Aziz Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 853 , Article Number 141523 Impact Factor: 2.8 Quartile: 1 Citations: 2 DOI: https://doi.org/10.1016/j.cplett.2024.141523	2024
Insight into the optoelectronic, and thermoelectric properties for zinc-based TMCs: First principle-based study <i>Muhammad Salman Khan Banat Gul Shah Hussain Gulzar Khan Amel Laref Shaukat Ali Khattak Syed Zulfiqar Tahirzeb Khan Tanveer Ahmad</i> <i>Physica B : Condensed Matter</i> , Volume 691, Article Number 416322 Impact Factor: 2.800 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1016/j.physb.2024.416322	2024
Exploring novel Na₄XS (X = Se, Te) materials for UV protection and photovoltaic efficiency: First-principles approach <i>Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Ghlamallah Benabdellah Siti Maisarah Aziz Hijaz Ahmad Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 856, Article Number 141670 Impact Factor: 2.800 Quartile: 1 DOI: https://doi.org/10.1016/j.cplett.2024.141670	2024
Insights into the optoelectronic, thermodynamic, and thermoelectric properties of novel BaYCuX₃ (X = Se, Te) semiconductors from first-principles investigation <i>Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Ghlamallah Benabdellah Gulzar Khan Bashir Ahmad Hijaz Ahmad Md Khalid Auranzeb</i> <i>Materials Science in Semiconductor Processing</i> , Vol:181, Article Number:108627 Impact Factor: 4.2 Quartile: 2 Citations: 1	2024

- First-Principles Study of Novel BaLnAgSe₃ (Ln = Er, Gd) Active UV-reflecting Materials for Optoelectronic and Thermoelectric Applications** 2024
Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Siti Maisarah Aziz Ghlamallah Benabdellah Faheem Abbas
Journal of Inorganic and Organometallic Polymers and Materials, Pages 1-13
Impact Factor: 3.900 | **Quartile:** 2
DOI: <https://doi.org/10.1007/s10904-024-03369-w>
- Exploring the optoelectronic and transport properties of novel ternary spinel semiconductors via first-principles calculation** 2024
Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Ghlamallah Benabdellah Faheem Abbas
Chemical Physics Letters, Volume 851, Article Number 141482
Impact Factor: 2.800 | **Quartile:** 1 | **Citations:** 1
DOI: <https://doi.org/10.1016/j.cplett.2024.141482>
- Investigating novel Mo₂X₃S (X = Se, Te) materials: probing the influence of chalcogen substitution on electronic, optical, and thermoelectric properties** 2024
Abdelhay Salah Mohamed Banat Gul Muhammad Salman Khan Hijaz Ahmad Mohd Khalid Awang Faheem Abbas
PHYSICA SCRIPTA, Volume 99, Number 10, Article Number 105949
Impact Factor: 2.600 | **Quartile:** 2
DOI: <https://doi.org/10.1088/1402-4896/ad7420>
- A systematic computational study of novel SrTrCu₃Se₄ (Tr = Al, Ga) direct band gap materials: Probing electronic, optical, and thermoelectric nature** 2024
Abdelhay Salah Mohamed Banat Gul Muhammad Salman Khan Bashir Ahmad Ghlamallah Benabdellah Hijaz Ahmad Faheem Abbas
Chemical Physics Letters, Volume 850, Article Number 141479
Impact Factor: 2.800 | **Quartile:** 1 | **Citations:** 1
DOI: <https://doi.org/10.1016/j.cplett.2024.141479>
- Spin-polarized electronic, optical, and transport properties of novel Cs₂XMoBr₆ (X=Na, Li) HDPs: First-principles study** 2024
Zia Ullah Banat Gul Abdelhay Salah Mohamed Ahmad Ali Gulzar Khan Muhammad Salman Khan Faheem Abbas
Chemical Physics Letters, Volume 850, Article Number 141471
Impact Factor: 2.800 | **Quartile:** 1
DOI: <https://doi.org/10.1016/j.cplett.2024.141471>
- First-principles study of electronic, optical, and thermoelectric properties of KMCuS₃ (M = Th and Sm) quaternary chalcogenides** 2024
Muhammad Salman Khan Banat Gul Abdelhay Salah Mohamed Faheem Abbas
RSC Advances, Volume 14(37), Pages 27332-27342
Impact Factor: 3.900 | **Quartile:** 2 | **Citations:** 2
DOI: <https://doi.org/10.1039/d4ra05001k>
- Unveiling the electronic, optical, thermoelectric, and magnetic properties of novel Ba₂GdMO₆ (M = Pa, Ta) via DFT calculation** 2024
Ahmad Ali Banat Gul Muhammad Salman Khan Gulzar Khan Abdelhay Salah Mohamed Faheem Abbas
Journal of Magnetism and Magnetic Materials, Volume 604, Article Number 172311
Impact Factor: 2.500 | **Quartile:** 3 | **Citations:** 2
DOI: <https://doi.org/10.1016/j.jmmm.2024.172311>
- Probing the electronic structure, optical, and transport nature of lanthanide-based ternary materials: A First-principles perspective** 2024
ABDELHAY SALAH MOHAMED Banat Gul Muhammad Salman Khan Ghlamallah Benabdellah Hijaz Ahmad Mohd Khalid Awang Faheem Abbas
Chemical Physics Letters, Vol:847, Article Number: 141366
Impact Factor: 2.8 | **Quartile:** 1 | **Citations:** 3
DOI: 10.1016/j.cplett.2024.141366
- Predictive modeling of novel GaAgX₂ (X = S, Se) chalcogenides: First-principles study of electronic, optical, and thermoelectric properties** 2024
ABDELHAY SALAH MOHAMED Banat Gul Muhammad Salman Khan Bashir Ahmad Ghlamallah Benabdellah Hijaz Ahmad
Chemical Physics Letters, Vol:846, Article Number: 141326
Impact Factor: 2.8 | **Quartile:** 2 | **Citations:** 1
DOI: 10.1016/j.cplett.2024.141326

Unveiling the physical properties of RbCu₃MSe₄ (M = Si, Ge) direct band gap semiconductors: A systematic first-principles study <i>Muhammad Salman Khan Banat Gul Bashir Ahmad Gulzar Khan Munirah D. Albaqami Saikh Mohammad Wabaidur Guenez Wafa Hijaz Ahmad</i> <i>Materials Science in Semiconductor Processing</i> , Volume: 177, Article Number: 108353 Impact Factor: 4.1 Quartile: 2 DOI: 10.1016/j.mssp.2024.108353	2024
Exploring the electronic, optical, and thermoelectric features of BaXCu₃Se₄ (X = In, Tl) quaternary chalcogenides: first-principles study <i>ABDELHAY SALAH MOHAMED Banat Gul Muhammad Salman Khan Ghlamallah Benabdellah Bashir Ahmad Hijaz Ahmad</i> <i>Physica Scripta</i> , Vol:99, Number:07, Article Number:075928 Impact Factor: 2.6 Quartile: 2 Citations: 5 DOI: 10.1088/1402-4896/ad51b4	2024
Insights into optoelectronic, thermodynamic, and thermoelectric properties of novel GePtCh (Ch = S, Se, Te) semiconductors: first-principles perspective <i>Muhammad Salman Khan Banat Gul Ghlamallah Benabdellah Bashir Ahmad Nouf H Alotaibi Saikh Mohammad Hijaz Ahmad</i> <i>Physica Scripta</i> , Volume:99, Issue:6, Article Number:065939, Pages:17 Impact Factor: 2.9 Quartile: 2 Citations: 1 DOI: 10.1088/1402-4896/ad451a	2024
Computational analysis of AIXSnSe₄ (X = Ag and Cu) quaternary compounds: Uncovering first-principles insights into electronic structure, optical, and thermoelectric nature <i>Ammar M. Tighezza Muhammad Salman Khan Banat Gul Gulzar Khan Bashir Ahmad Hijaz Ahmad</i> <i>Chemical Physics Letters</i> , Volume:841, Article Number: 141198 Impact Factor: 2.8 Quartile: 2 DOI: 10.1016/j.cplett.2024.141198	2024
Exploring the electronic structure, optical and magnetic nature in Sr₂UXO₆ (X = Fe, & Ni) double perovskites: First-principles study <i>Ahmad Ali Banat Gul Muhammad Salman Khan Gulzar Khan Sikander Azam Ahmad A Ifseisi Guenez Wafa Faheem Abbas</i> <i>Chemical Physics Letters</i> , Volume 841, Article Number 141168 Impact Factor: 2.800 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1016/j.cplett.2024.141168	2024
The enhanced optoelectronic, and thermoelectric nature of novel KXCuS₃ (X = Zr, Hf) semiconductors: An inclusive ab-initio study <i>Muhammad Salman Khan Banat Gul Ghlamallah Benabdellah Gulzar Khan Bashir Ahmad Saikh Mohammad Wabaidur Ammar M. Tighezza Hijaz Ahmad</i> <i>Optik</i> , Volume: 300, Article Number: 171660 Impact Factor: 3.1 Quartile: 1 DOI: 10.1016/j.ijleo.2024.171660	2024
First-principles investigation of InAgASe₄ (A = Ge, Sn) quaternary chalcogenides: Unveiling electronic, optical, and thermoelectric features <i>Muhammad Salman Khan Banat Gul Bashir Ahmad Zia Ullah Gulzar Khan Ahmad A Ifseisi Hijaz Ahmad</i> <i>Chemical Physics Letters</i> , Vol:839, Article Number: 141133 Impact Factor: 2.8 Quartile: 2 Citations: 6 DOI: 10.1016/j.cplett.2024.141133	2024
Tailoring the optoelectronic, thermoelectric, and thermodynamic properties of rare-earth quaternary chalcogenides: An inclusive first-principles study <i>Muhammad Salman Khan Banat Gul Ghlamallah Benabdellah Bashir Ahmad Munirah D. Albaqami Saikh Mohammad Wabaidur Hijaz Ahmad</i> <i>Materials Today Communications</i> , Volume 38, Article Number 107848 Impact Factor: 3.8 Quartile: 2 Citations: 18 DOI: https://doi.org/10.1016/j.mtcomm.2023.107848	2024
First-principles study of the electronic structure, optical, thermodynamic, and thermoelectric nature in MgACu₃Se₄ (A = Sc, Y) semiconductors <i>Muhammad Salman Khan Banat Gul Ghlamallah Benabdellah Bashir Ahmad Mohammad Rezaul Karim4 Ibrahim A. Alnaser Hijaz Ahmad</i> <i>Optical and Quantum Electronics</i> , Volume 56, Article Number 609, Pages: 22 Impact Factor: 3.0 Quartile: 2 Citations: 9 DOI: 10.1007/s11082-023-06264-9	2024
Insight into the electronic, optical, and transport properties of novel BaLaCuX₃ (X = S, Se, and Te) quaternary chalcogenides	2024

Muhammad Salman Khan Banat Gul Bashir Ahmad Ammar M. Tighezza Hijaz Ahmad
Journal of Solid State Chemistry, Volume 330, Article Number 124496

Impact Factor: 3.3 | **Quartile:** 2 | **Citations:** 12

DOI: <https://doi.org/10.1016/j.jssc.2023.124496>

Cu-based novel transition-metals chalcogenides for advanced optoelectronic and thermoelectric devices: first-principles study

2024

Banat Gul Muhammad Salman Khan Mostafizur Rahaman³ Govindasami Periyasami³ Hijaz Ahmad
Physica Scripta, Volume: 99, Number: 02, Article Number:025954

Impact Factor: 2.9 | **Quartile:** 2 | **Citations:** 10

DOI: 10.1088/1402-4896/ad1c7c

First-principles study of electronic, optical, magnetic, and thermoelectric properties of novel Sr₂UXO₆ (X = Mn, Zn) double perovskites

2024

Ahmad Ali Muhammad Salman Khan Muhammad Irfan Gulzar Khan Banat Gul Sikander Azam Haris Haider Abd Ullah Mohammad Rezaul Karim Ibrahim A. Alnaser Faheem Abbas

Chemical Physics Letters, Volume 835, Article Number: 141019

Impact Factor: 2.8 | **Quartile:** 2 | **Citations:** 10

DOI: 10.1016/j.cplett.2023.141019

Unveiling the electronic, optical, thermoelectric, and thermodynamic properties of novel SrXCu₃Se₄ (X = In, Tl) materials: A systematic DFT study

2024

Muhammad Salman Khan Banat Gul Ghulamallah Benabdellah Bashir Ahmad Mohamed Ouladsmene Hijaz Ahmad
Chemical Physics Letters, Volume 835, Article Number 141012

Impact Factor: 2.80 | **Quartile:** 2 | **Citations:** 12

DOI: <https://doi.org/10.1016/j.cplett.2023.141012>

Exploring the electronic, magnetic, and elastic properties of binary AB₂ (A = Sc, Y, and La; B = Fe, Co, and Ni) intermetallics: First-principles study

2023

Sundas Ara Ahmad Ali Banat Gul Gulzar Khan Zahid Ali Mohamed Ouladsmene Muhammad Salman Khan Faheem Abbas Syed Zulfiqar Shaukat Ali Khattak Tahirzeb Khan

Materials Science and Engineering B: Solid-State Materials for Advanced Technology, Volume 298, Article Number:116881

Impact Factor: 3.6 | **Quartile:** 2 | **Citations:** 3

DOI: 10.1016/j.mseb.2023.116881

Unveiling the electronic structure and optical properties of two-dimensional TMDCs: first-principles study

2023

Banat Gul Muhammad Salman Khan Abdelhay Salah Mohamed Guenez Wafa Hijaz Ahmad
Optical Materials Express, Volume 13, No. 12, Pages 3688-3702

Impact Factor: 2.8 | **Quartile:** 2 | **Citations:** 1

DOI: <https://doi.org/10.1364/OME.502050>

First-principles study of the optoelectronic and thermoelectric properties of lead-free ASnI₃ (A = K, Rb, and Cs) novel halide perovskites

2023

Banat Gul Muhammad Salman Khan Muhammad Aasim Gulzar Khan Hijaz Ahmad Phatiphat Thounthong
Physica B : Condensed Matter, Physica B 669 (2023) 415316

Impact Factor: 2.8 | **Quartile:** 3 | **Citations:** 3

DOI: 10.1016/j.physb.2023.415316

Insight into the Optoelectronic Nature and Mechanical Stability of Binary Chalcogenides: A First-Principles Study

2023

Banat Gul Md. Fayz-Al-Asad Muhammad Salman Khan Mostafizur Rahaman Govindasami Periyasami Hijaz Ahmad
ChemElectroChem, Volume10, Issue22, Article Number:e202300368,

Impact Factor: 4.0 | **Quartile:** 2 | **Citations:** 3

DOI: 10.1002/celec.202300368

First-principles study of potassium-based novel chalcogenide materials for optoelectronic and thermoelectric devices

2023

Banat Gul Muhammad Salman Khan AhmadAlfseisi Hijaz Ahmad
Physica scripta, Volume 98, Number 11, Article Number: 115927

Impact Factor: 2.9 | **Quartile:** 2 | **Citations:** 13

DOI: 10.1088/1402-4896/acfeaa

Exploring the electronic, optical, and thermoelectric properties of Ba₂GeX₄ (X = S, and Se) novel chalcogenides

2023

Banat Gul Muhammad Salman Khan Bashir Ahmad Govindasami Periyasami Mostafizur Rahaman Hijaz Ahmad

Journal of Solid State Chemistry, 326 (2023) 124243

Impact Factor: 3.3 | Quartile: 2 | Citations: 1

DOI: 10.1016/j.jssc.2023.124243

The spin-polarized electronic and optical properties of novel Ba₂TaXO₆ (X = Co, Fe, In) for optoelectronic applications: An ab-initio study

2023

Ahmad Ali Muhammad Salman Khan Gulzar Khan Banat Gul Ahmed M Tawfeek Sikandar Azam Faheem Abbas Syed Zulfiqar Shaukat Ali Khattak Tahirzeb Khan Said Karim Shah

Journal of Solid State Chemistry, Vol:326, Article Number: 124211

Impact Factor: 3.3 | Quartile: 2 | Citations: 11

DOI: 10.1016/j.jssc.2023.124211

A first-principles study of the electronic, optical, and transport properties of novel transition metal dichalcogenides

2023

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Materials Advances, Volume 4, Pages 4204-4215

Impact Factor: 5.200 | Quartile: 2 | Citations: 14

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2023

Banat Gul Muhammad Salman Khan M Aasim Ahmad A Ifseisi Gulzar Khan Hijaz Ahmad

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Impact Factor: 4.1 | Quartile: 2 | Citations: 2

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2023

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2023

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Impact Factor: 4.682 | Quartile: 2 | Citations: 17

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2023

Hazem Abu-Farsakh Banat Gul Muhammad Salman Khan

ACS Omega, Vol: 8, No.16, Pages:14742-14751

Impact Factor: 4.132 | Quartile: 2 | Citations: 18

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The physical properties of RbAuX (X = S, Se, Te) novel chalcogenides for advanced optoelectronic applications: An ab-initio study

2023

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Impact Factor: 3.572 | Quartile: 3 | Citations: 12

DOI: <https://doi.org/10.1016/j.commatsci.2023.112098>

First principle study of strain tunable electronic and optical properties of half-Heusler alloys XCoGe (X=V, Nb, Ta)

2023

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Journal of Solid State Chemistry, Volume 319, Article Number 123827

Impact Factor: 3.656 | Quartile: 2 | Citations: 7

DOI: <https://doi.org/10.1016/j.jssc.2022.123827>

Enlightening the stability and optoelectronic properties of Ba₂MLnSe₅ (M = Ga, In; Ln = Y, Nd, Sm, Gd, Dy, Er) semiconductors: A first-principles study

2023

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Impact Factor: 3.656 | **Quartile:** 2 | **Citations:** 2

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Impact Factor: 3.945 | **Quartile:** 1 | **Citations:** 4

DOI: [10.1039/d2cp03711d](https://doi.org/10.1039/d2cp03711d)

First-principles analysis of novel Mg-based group II-VI materials for advanced optoelectronics devices

2023

Banat Gul Muhammad Salman Khan Hijaz Ahmad Phatiphat Thounthong

Journal of Solid State Chemistry, Volume 318, Article Number 123726

Impact Factor: 3.656 | **Quartile:** 2 | **Citations:** 11

DOI: <https://doi.org/10.1016/j.jssc.2022.123726>

First-principles calculations to investigate the optoelectronic, and thermoelectric nature of zinc based group II-VI direct band semiconductors

2022

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Impact Factor: 2.840 | **Quartile:** 2 | **Citations:** 6

DOI: <https://doi.org/10.1016/j.jllo.2022.170143>

Characterization of extracellular vesicles by flow cytometry: Challenges and promises

2022

Banat Gul Feryal Syed Shamim Khan Abid Iqbal Iftikhar Ahmad

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DOI: <https://doi.org/10.1016/j.micron.2022.103341>

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2022

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Impact Factor: 8.067 | **Quartile:** 1 | **Citations:** 17

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Banat Gul Abid Iqbal Majid Khan Iftikhar Ahmad

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Impact Factor: 1.608 | **Quartile:** 3 | **Citations:** 1

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2022

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Impact Factor: 3.498 | **Quartile:** 2 | **Citations:** 10

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2022

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Impact Factor: 3.927 | **Quartile:** 1 | **Citations:** 15

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Impact Factor: 3.498 | **Quartile:** 2 | **Citations:** 18

DOI: <https://doi.org/10.1016/j.jssc.2021.122853>

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Numerical study of SF₆/O₂ plasma discharge for etching applications <i>Banat Gul Almas Gul Aman Ur Rehman Iftikhar Ahmad</i> <i>Plasma Chemistry and Plasma Processing</i> , Pages 1-16 Impact Factor: 3.337 Quartile: 2 Citations: 8 DOI: https://doi.org/10.1007/s11090-021-10170-x	2021
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Impact Factor: 3.081 | **Quartile:** 2 | **Citations:** 20

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Impact Factor: 2.518 | **Quartile:** 2 | **Citations:** 1

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Waqas Muhammad Khan Altaf Ur Rahman Muhammad Tufail Muhammad Ibrar Wiqar Hussain Shah Waqar Adil Syed Banat Gul

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Muhammad Majeed Banat Gul Gulfam Zia Aman Ur Rehman

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Editorial Activities

Materials Chemistry and Physics Reviewed Papers for Journals Impact Factor: 5.08	2024
Results in Physics Reviewed Papers for Journals Impact Factor: 5.51	2024
Optics & Laser Technology Reviewed Papers for Journals Impact Factor: 5.4	2024
Optics & Laser Technology Reviewed Papers for Journals Impact Factor: 5.4	2024
Materials Chemistry and Physics Reviewed Papers for Journals Impact Factor: 5.02	2024
Inorganic Chemistry Communications Reviewed Papers for Journals Impact Factor: 3.92	2024
Optics & Laser Technology Reviewed Papers for Journals Impact Factor: 5.4	2024