

Sajad Hussain

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Education

Beijing Institute of Technology, China	Materials Physics	PhD, 2012
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Professional Experience

Associate Professor,
Department of Physics, University of Education Lahore, Jauharabad
Campus. Punjab, Pakistan
Assistant Professor,
Department of Physics, University of Education Lahore, Faisalabad Campus.
Punjab, Pakistan
Assistant Professor,
Department of Physics, University of Lahore. Punjab, Pakistan
Alexander von Humboldt (AvH) Post Doctorate Fellow,
Hybrid Nanostructures Group, Department of Physics, University of Konstanz,
Germany
Assistant Professor,
Department of Physics, Science College Al-Zulfi, Majmaah University, Kingdom
of Saudi Arabia
Assistant Professor, Department of Physics, COMSATS Institute of
Information Technology, Islamabad, Pakistan
Assistant Professor, Department of Physics, Government College University
Faisalabad, Pakistan

Honors and Awards

2014	Alexander von Humboldt Research Fellowship
2008	China Scholarship Council (CSC) Scholarship for Doctoral Program

Research Grants Awarded

- (1) Mobility Partnership for Faculty and Students; PAK-UK Education Gateway, 2023.
- (2) Synthesis and simulation of carbon-based solid-state dye-sensitized solar cells (s-DSSCs) for cost-effective solar light harvesting; 1million PKR; HEC Pakistan, 2021.
- (3) Grant for upgrading Laboratory Department of Physics at University of Education; 2.001million PKR; HEC Pakistan, 2018.
- (4) Tin Based Novel Cubic Chalcogenides: A New Paradigm for Optoelectronic and Photovoltaic Research; 3.37 million PKR; HEC Pakistan 2018.
- (5) Interfacial study of Cu₂O/ZnO solar cells through impedance spectroscopy”; 4.4 million PKR; HEC Pakistan, 2018.
- (6) CH₃NH₃CuCl₃/ZnO nanowires array solar cells; Funded by Alexander von Humboldt, Germany, 2014. ~€90,000
- (7) Synthesis of Cu based thin films; 0.50 million PKR; HEC Pakistan, 2014.

- (8) Growth and characterization of nanostructure semiconductors through solution method; 0.50 million PKR; HEC Pakistan, 2012.

Training, Symposium and Conferences

- Training of Scanning Electron Microscope at EM CRAFTS, South Korea. 04/05/2018
- Training of Micro PL Raman Mapping measurement system at DongWoo Optron, South Korea. 02/05/2018
- Fabrication of Perovskite based solar cells (workshop), Germany.
- Nanotechnology: Current Trends & Future Prospects in Pakistan. NIBGI, Faisalabad. 15/01/2017. Invited speaker.
- 2nd International conference on Materials Science & Nanotechnology 2018. G.C University Faisalabad. 19-20/02/2018. (organizer)
- 3rd International conference on Materials Science & Nanotechnology 2019. G.C University Faisalabad. 18-20/02/2019. (speaker)
- 5th International conference on Materials Science & Nanotechnology 2022 G.C University Faisalabad. 22-23/10/2022. (speaker)
- 3rd International Conference Advances in Materials Science 2022. University of Education Lahore. 15-16/12/2022. (Conference Advisor)
- 6th International conference on Materials Science & Nanotechnology 2023. G.C University Faisalabad. 25-27/09/2023. (speaker)
- International conference on Science and Technology 2023. Thal University Bhakkar. 9-10/11/2023
- 3rd International Conference on Recent Trends in Natural Sciences. University of Education Lahore, Jauharabad campus. 24-25/04/2024. (Conference Chair)
- International Conference on Computational Physics, University of Lahore. 09/04/2017. (Organizer)
- Emerging Trends in Physics, Government College Women University Faisalabad. 7-8/02/2028 (Speaker)
- 3rd international conference on material science and nanotechnology 2019

- International conference on recent advances in materials science and photocatalysis. 28-30/10/2018. (speaker)
- First international conference on material science and nanotechnology ICMSN 2018
- Two-day seminar on emerging trends in physics February 7-8, 2018
- One day national seminar on cancer-A growing problem. University of Education Faisalabad Campus. 08/05/2018. (Organizer)
- 1st International conference on materials science and nanotechnology. University of Balochistan Quetta. 2-4/09/2018 (speaker)
- 6th international conference on Semiconductor Materials and nano-devices (6th ICSMAND) February 17-18, 2018, Bahawalpur-Pakistan (Participant)

Publications – Research Articles

- (1) Tuning the electrochemical properties of W18O49 by conjugating with reduced graphene oxide and cerium oxide. Zartasha Sarwar, Muhammad Umair, Sumara Ashraf, Yasir Javed, **S Hussain**, Naveed Akhtar Shad, Asim Jilani, Muhammad Ramzan Khawar, Chungyeon Cho, Dongwhi Choi. Alexandria Engineering Journal. 107 (2024) 614-624
- (2) 2D TiO2/Zn3V2O8 flake-like composites for hybrid storage device and simulation-based analysis of capacitive and diffusive contribution. Muhammad Ramzan Khawar, Iqra Kanwal, Muhammad Umair, Awais Ahmad, Aqsa Ghazal, Naveed Akhtar Shad, **S Hussain**, Ammar Mohamed Tighezza, Yasir Javed, Dongwhi Choi. Journal of Energy Storage. 99 (2024) 113422
- (3) ZnS@Fe2O3 core-shell nanorod arrays for supercapattery applications; theoretical evaluation of faradic and non-faradic behavior using Dunn's model. Rabbia Hasan, Yasir Altaf, Nawishta Jabeen, Najam Ul Hassan, Fahim Ahmed, **Sajad Hussain**, Ahmad Hussain, Sana Ullah Asif, Bandar Ali Al-Asbahi. J of Electroanalytical Chemistry. 966 (2024) 118411.
- (4) Predominated capacitive behavior of Ag-doped magnesium vanadate as a novel electrode material for supercapacitors. Muhammad Umair, Naveed Akhtar Shad, **S Hussain**, Asim Jilani, Muhammad Munir Sajid, Muhammad Imran Arshad, Hafiz Talha Hasnain Rana, Surender Kumar Sharma, Yogendra Kumar Mishra, Yasir Javed. International Journal of Hydrogen Energy. 48-49 (2023) 34610-34623.
- (5) Facile hydrothermal synthesis of MoS2 nano-worms-based aggregate as electrode material for high energy density asymmetric supercapacitor. A Asghar, MS Rashid, Y Javed, S Hussain, NA Shad, M Hamza, Z Chen. Electrochimica Acta. 465 (2023) 143011.
- (6) Effect of Cerium Oxide and rGO Conjugation on the Electrochemical Energy Storage Traits of V2O5 Nanomaterials. Z Sarwar, M Umair, Y Javed, S Hussain, NA Shad, A Jilani, AA Shah. Journal of Electronic Materials. 52-10 (2023) 6578-6593.
- (7) High-Performance Electrode Materials for Electrochemical Energy Storage Devices Based on Microrod-Like Structures of Calcium Phosphate (Ca2P2O7). A Asghar, Z Chen, EA Al Harthi, J Hakami, MS Rashid, H Sultana, S Hussain. Physica status solidi (RRL)–Rapid Research Letters. 17-10 (2023) 2300178.
- (8) Charge transfer in copper oxide thin films deposited at different electrodeposition potential. Nazakat Ali, **Sajad Hussain**, Muhammad Waqas, M Faheem, Naveed Ahmad, Adnan Ali, M Yasir Ali, Khalid Mahmood, Lukas Schmidt-Mende. Physica B: Condensed Matter. 659 (2023) 414881.
- (9) Dysprosium doped calcium tungstate as an efficient electrode material for the electrochemical energy storage devices. Hafiz Talha Hasnain Rana, Naveed Akhtar Shad, **S Hussain**, Asim Jilani, Muhammad Umair, Muhammad Munir Sajid, Muhammad Faheem, Attaullah Shah, Yasir Jamil, Munib Ahmed Shafique, Yasir Javed. Ceramics International. 49 (2023) 18896.
- (10) Synthesis of Co3O4/NiO nanospherical composites as electrode material for high-performance supercapacitors. Mohammad Shariq, Amal BaQais, Talal M Althagafi, Osama Madkhali, Arafa A

- Alholaisi, **Sajad Hussain**, Yasir Javed. The European Physical Journal Plus. 138 (5) 389
- (11) Robust synergistic effect of TiS₂/MoS₂ hierarchical micro-flowers composite realizing enhanced electrochemical performance. Ghulam Nabi, Wajid Ali, Muhammad Tanveer, Tahir Iqbal, Muhammad Rizwan, **S Hussain**. Journal of Energy Storage. 58 (2023) 106316
 - (12) Controlled synthesis of GaN square shape nanorods: Their excellent electronic and optical properties for optoelectronics applications. M Maraj, G Nabi, M Tanveer, S Hussain, W Wei, M Shakil, MI Khan. Journal of Luminescence. 253 (2023) 119474.
 - (13) Cerium oxide nanosheets-based tertiary composites (CeO₂/ZnO/ZnWO₄) for supercapattery application and evaluation of faradic & non-faradic capacitive distribution by using Donn's model. Muhammad Ramzan Khawar, Naveed Akhtar Shad, **Sajad Hussain**, Yasir Javed, Muhammad Munir Sajid, Asim Jilani, Muhammad Faheem, Ali Asghar. Journal of Energy Storage. 55(22) 105778
 - (14) Modulation of thermoelectric power generation performance of ZnO nanostructures by controlling the Mn atoms concentration. Ubaid ur Rehman, Jolly Jacob, F.F. Al-Harbi, A. Ashfaq, K. Mahmood, A. Ali, N. Amin, Mongi Amami, **S. Hussain**, K. Javaid, Salma Ikram, Kashaf ul Sahar. Ceramics International. 48 (2022) 16183–16187.
 - (15) Investigating the potential of AgZnO thin film composites for waste heat recovery using Seebeck data. Inaam Ullah, Jolly Jacob, F.F. Al-Harbi, K. Mahmood, A. Ali, M. Tamseel, Salma Ikram, N. Amin, K. Javaid, Lamia Ben Farhat, **S. Hussain**, M. Yasir Ali. Optical Materials. 127 (2022) 112318.
 - (16) Effect of Al-doping on the thermoelectric properties of CZTS thin film grown by sol-gel method. Arslan Ashfaq, Jolly Jacob, Mongi Amami, F.F. Al-Harbi, A. Ali, K. Mahmood, U. Rehman, N. Amin, S. Ikram, S. Tahir Akbar, **S. Hussain**. Solid State Communications. 345 (2022) 114701.
 - (17) Sulfurization temperature induced enhancement in thermoelectric properties of polycrystalline WS₂ nanomaterials. Salma Ikram, Jolly Jacob, F.F. Al-Harbi, K. Mahmood, A. Ali, N. Amin, Tariq Sikindar, Mongi Amami, **S. Hussain**, K. Javaid. Optical Materials. 124 (2022) 112004.
 - (18) Green synthesis of TiO₂ nanoparticles using lemon peel extract: their optical and photocatalytic properties. G Nabi, QU Ain, MB Tahir, K Nadeem Riaz, T Iqbal, M Rafique, S Hussain. International Journal of Environmental Analytical Chemistry. 102 (2), 434-442.
 - (19) Effects of solid particles on fluid-particulate phase flow of non-Newtonian fluid through eccentric annuli having thin peristaltic walls Arshad Riaz, Aziz Ullah Awan, **Sajad Hussain**, Sami Ullah Khan, Kashif Ali Abro. Journal of Thermal Analysis and Calorimetry. 147 (2022) 1645–1656.
 - (20) Improving the thermoelectric properties of zinc tin oxide thin films by varying post growth annealing duration. Ubaid ur Rehman, M. Kanwal, K. Mahmood, A. Ashfaq, A. Ali, S. Tahir, Kashaf ul Sahar, M. Naeem, **S. Hussain**. Ceramics International. 47 (2021) 32371–32375.
 - (21) Effect of annealing temperature on the thermoelectric properties of ZnInO thin films grown by physical vapor deposition. Israr ul Haq, Jolly Jacob, Khurram Mehboob, K. Mahmood, A. Ali, Nasir Amin, Salma Ikram, **S. Hussain**, Yuyi Feng, Fouzia Ashraf. Physica B: Physics of Condensed Matter. 606 (2021) 412569.
 - (22) Structural elucidation and dielectric behavior evaluation of Dy–Ni substituted manganese ferrites. Muhammad Junaid, Jolly Jacob, Mubashar Nadeem, Nadia Jabbar, Muhammad Azhar Khan, Alina Manzoor, Adeel Hussain Chughtai, A. Ali, K. Mahmood, **S. Hussain**. Physica B: Physics of Condensed Matter. 602 (2021) 412494.
 - (23) Smooth growth, characterization and optical properties of Cu₂SnS₃ thin film via spray pyrolysis method. Ghulam Nabi, Farrukh Amin, Jolly Jacob, M. Bilal Tahir, Muhammad Tanveer, Zahid Usman, **S. Hussain**. Physica B: Physics of Condensed Matter. 602 (2021) 412498.
 - (24) Effect of sulfur amount during post-growth sulfurization process on the structural, morphological and thermoelectric properties of sol-gel grown quaternary chalcogenide ... A Ashfaq, Jolly Jacob, K Mahmood, Khurram Mehboob, Salma Ikram, A Ali, N Amin, **Sajad Hussain**, U Rehman. Physica B: Condensed Matter. 602 (2021) 412497.

- (25) Study of structural, optical and electrical properties of La³⁺ doped Mg_{0.25} Ni_{0.15} Cu_{0.25} Co_{0.35} Fe_{2-x} Lax O₄ spinel ferrites Asma Aslam, NA Morley, Nasir Amin, Muhammad Imran Arshad, Muhammad Ajaz un Nabi, Adnan Ali, Khalid Mahmood, Aisha Bibi, Faisal Iqbal, **Sajad Hussain**, Yasir Jamil. *Physica B: Condensed Matter* 602 (2021) 412565.
- (26) Correlation of thermoelectric properties of Cu₂ZnSnS₄ thin films grown by the chemical solution method with sulfur concentration A Ali, Jolly Jacob, Khurram Mehboob, **Sajad Hussain**, Arslan Ashfaq, K Mahmood, S Ikram, N Amin, U Rehman, Sofia Akbar, Sajid Hussain Siya. *Journal of Physics and Chemistry of Solids*. 148 (2021) 109677.
- (27) Modulation of secondary phases in hydrothermally grown zinc oxide nanostructures by varying the Cu dopant concentration for enhanced thermo power. U. Rehman, Jolly Jacob, Abid Mahmood, K. Mahmood, A. Ali, A. Ashfaq, M. Basit, N. Amin, S. Ikram, **S. Hussain**. *Journal of Alloys and Compounds*. 843 (2020) 156081.
- (28) Effect of annealing temperature on thermoelectric properties of zinc nitride thin films grown by thermal evaporation method Hassnain Zaman, Jolly Jacob, Khurram Mehboob, K Mahmood, U Rehman, Salma Ikram, A Ali, A Ashfaq, N Amin, **Sajad Hussain**, Z Tanveer, Usman ul Ghani. *Ceramics International*. 46-16 (2020) 25992-25995
- (29) Structural, Spectroscopic, Dielectric, and Magnetic Properties of Cu-Co-Co-substituted Manganese Soft Ferrites. Muhammad Junaid & Jolly Jacob & Mubashar Nadeem & Muhammad Azhar Khan & Skindar Hayat & Alina Manzoor & Sajjad Ahmad & Sara Musaddiq & Waseem Abbas & A. Ali & K. Mahmood & S. Hussain. *Journal of Superconductivity and Novel Magnetism*. 33 (2020) 3171 3177.
- (30) Improving the thermoelectric performance of hydrothermally synthesized FeS₂ nanoparticles by post sulfurization. U. Rehman, Jolly Jacob, K. Mahmood, A. Ali, A. Ashfaq, M. Basit, N. Amin, S. Ikram, **S. Hussain**, Hadia Noor, Aqrab ul Ahmad, Naeem ur Rehman. *Ceramics International*. 46 (2020) 20496–20499.
- (31) A novel approach to simultaneously enhance the Seebeck coefficient and electrical conductivity in rutile phase of TiO₂ nanostructures. Salma Ikram, Jolly Jacob, Khurram Mehboob, K. Mahmood, A. Ashfaq, A. Ali, N. Amin, **Sajad Hussain**, U. Rehman. *Arabian Journal of Chemistry*. 13 (2020) 6724–6729.
- (32) Improved thermoelectric performance of Al and Sn doped ZnO nano particles by the engineering of secondary phases. Jolly Jacob, U. Rehman, K. Mahmood, A. Ali, Khurram Mehboob, A. Ashfaq, S. Ikram, N. Amin, **S. Hussain**, Fouzia Ashraf. *Ceramics International*. 46 (2020) 15013–15017.
- (33) A Kinetic study of Tb³⁺ and Dy³⁺ co-substituted CoFe₂O₄ spinel ferrites using temperature dependent XRD, XPS and SQUID measurements. Salma Ikram, Jolly Jacob, K. Mahmood, Khurram Mehboob, Mutaiba Maheen, A. Ali, N. Amin, **Sajad Hussain**, Fouzia Ashraf, S.Z. Ilyas. *Ceramics International*. 46 (2020) 15943–15948.
- (34) Role of cerium-doping in CoFe₂O₄ electrodes for high performance supercapacitors. Ghulam Nabi, Waseem Raza, Muhammad Arshad Kamran, Thamer Alharbi, Muhammad Rafique, Muhammad Bilal Tahir, **Sajad Hussain**, N.R. Khalid, Qurat ul-Aain, Nafifisa Malik, Rashid S. Ahmed, CB Cao. *Journal of Energy Storage*. 29 (2020) 101452.
- (35) Designing of Seebeck coefficient and electrical conductivity in CZTS thin films for giant power factor. Arslan Ashfaq, Jolly Jacob, A. Ali, Khurram Mehboob, K. Mahmood, U. Rehman, W. Ahmad, S. Ikram, N. Amin, Sofia Tahir, M. Imran Arshad, M. Ajaz un Nabi, **Sajad Hussain**. *Ceramics International*. 46 (2020) 9646–9655.
- (36) Enhancement of thermoelectric properties of sulphurized CZTS nano-crystals by the engineering of secondary phases. A. Ali, Jolly Jacob, M. Imran Arshad ,M. Ajaz un Nabi, Arslan Ashfaq, K. Mahmood, N. Amin, S. Ikram, U. Rehman, **Sajad Hussain**, Khurram Mehboob. *Solid State Sciences*. 103 (2020) 106198.
- (37) Enhancement in photovoltaic properties of bismuth ferrite/zinc oxide heterostructure solar cell device with graphene/indium tin oxide hybrid electrodes. A.M. Afzal, Yasir Javed, **Sajad Hussain**,

- Adnan Ali, M.Z. Yaqoob, Sohail Mumtaz. *Ceramics International*. 46 (2020) 9161–9169.
- (38) Numerical simulation of perovskite/Cu₂Zn(Sn_{1-x}Gex)₄ interface to enhance the efficiency by valence band offset engineering. Muazma Jamil, A. Ali, K. Mahmood, M. Imran Arshad, Sofifia Tahir, M. Ajaz un Nabi, Salma Ikram, N. Amin, **S. Hussain**. *Journal of Alloys and Compounds*. 821 (2020) 153221.
 - (39) Influence of Ce³⁺ substitution on the structural, electrical and magnetic properties of Zn_{0.5}Mn_{0.43}Cd_{0.07}Fe₂O₄ spinel ferrites. Salma Ikram, Jolly Jacob, K. Mahmood, A. Ali, N. Amin, U. Rehman, M. Imran Arshad, M. Ajaz un Nabi, Kashif Javid, A. Ashfaq, M. Sharif, **S. Hussain**. *Physica B: Physics of Condensed Matter*. 580 (2020) 411764.
 - (40) Gallium vacancies role in hydrogen storage of single-crystalline GaN hexagonal micro-sheets. Ghulam Nabi, Muhammad Arshad Kamran, Thamer Alharbi, Muhammad Rafique, M. Bilal Tahir, **Sajad Hussain**, N.R. Khalid, Tahir Iqbal, Muhammad Shakil, Chuanbao Cao. *International journal of hydrogen energy*. 45 (2020) 4731–4742.
 - (41) Optimizing the electrical transport properties of ZnSnO thin films by post growth annealing in air. U. Rehman, K. Mahmood, A. Ali, A. Ashfaq, A. Rehman, M. Ajaz un Nabi, M. Imran Arshad, N. Amin, S. Ikram, **S. Hussain**. *Optik - International Journal for Light and Electron Optics*. 204 (2020) 164148.
 - (42) Ultrathin Pd-Based Nanosheets: Syntheses, Properties and Applications Farhat Nosheen, Nimra Wasfi, Sehrish Aslam, Tauseef Anwar, **Sajad Hussain**, Naveed Hussain, Syed Nasir Shah, Nusrat Shaheen, Adnan Ashraf, Yating Zhu, Haiqing Wang, Jianmin Ma, Zhicheng Zhang and Wenping Hu. *Nanoscale*. 12-7 (2020) 4219–4237.
 - (43) Effect of tin concentration on the structural, optical and thermoelectric properties of CZTS thin films grown by chemical solution method. A. Ali, Jolly Jacob, Arslan Ashfaq, K. Mahmood, Salman Ahmad, U. Rehman, W. Ahmad, N. Amin, S. Ikram, **S. Hussain**, Nasir Ali, M. Azhar Khan. *Ceramics International*. 45 (2019) 22513–22516.
 - (44) Modulation of thermoelectric properties of bulk ZnAlO by annealing in oxygen environment. Jolly Jacob, K. Mahmood, M. Yousf Usman, U. Rehman, A. Ali, A. Ashfaq, Nasir Amin, S. Ikram, **S. Hussain**. *Physica B: Condensed Matter*. 572 (2019) 247–250.
 - (45) Modulation of thermoelectric properties of Mg₂GeO₄ thin films by controlling the growth process. K. Mahmood, Jolly Jacob, A. Rehman, A. Ali, U. Rehman, N. Amin, S. Ikram, A. Ashfaq, **S. Hussain**. *Ceramics International*. 45 (2019) 18701–18703.
 - (46) Thermoelectric properties of Zn₂GeO₄ nano-crystals grown on ITO and Au-coated Si substrates by thermal evaporation. K. Mahmood, Jolly Jacob, R. Zahra, A. Ail, U. Rehman, A. Ashfaq, W. Ahmed, N. Amin, M.I. Arshad, Kashif Javaid, S. Ikram, M. Ajaz un Nabi, **S. Hussain**, Yuyi Feng. *Ceramics International*. 45 (2019) 18333–18337.
 - (47) Direct growth of ZnSnO nano-wires by thermal evaporation technique for thermoelectric applications. U. Rehman, Jolly Jacob, K. Mahmood, A. Ali, A. Ashfaq, Nasir Amin, S. Ikram, W. Ahmad, **S. Hussain**. *Physica B: Condensed Matter*. 570 (2019) 232–235.
 - (48) Growth of Mg₂GeO₄ nano-crystals on Si substrate and modulation of Seebeck coefficient by post growth annealing technique. A. Rehman, Jolly Jacob, R. Zahra, K. Mahmood, A. Ali, U. Rehman, Yasir Ali, A. Ashfaq, W. Ahmed, S. Ikram, N. Amin, **S. Hussain**. *Ceramics International*. 45 (2019) 16275–16278.
 - (49) Modulation of structural, optical and thermoelectric properties of sol-gel grown CZTS thin films by controlling the concentration of zinc. A. Ali, Jolly Jacob, Arslan Ashfaq, M. Tamseel, K. Mahmood, N. Amin, **S. Hussain**, W. Ahmad, U. Rehman, S. Ikram, Dheya Shjaa Al-Othmany. *Ceramics International*. 45 (2019) 12820–12824.

- (50) Effect of secondary phases on the thermoelectric properties of Zn₂GeO₄ nano-crystals grown by thermal evaporation on Au coated Si substrate. R Zahra, Jolly Jacob, N Bano, A Ali, K Mahmood, S Ikram, M.I. Arshad, A Ashfaq, U Rehman, **Sajad Hussain**. Physica B: Condensed Matter. 564 (2019) 143-146.
- (51) A two-step technique to remove the secondary phases in CZTS thin films grown by sol - gel method. Arslan Ashfaq, Jolly Jacob, N. Bano, M. Ajaz Un Nabi, A. Ali, W. Ahmad, K. Mahmood, M.I. Arshad, Salma Ikram, U. Rehman, N. Amin, **S. Hussain**. Ceramics International. 45 (2019) 10876–10881.
- (52) Growth of Cu₂InO₄ thin films on Si substrate by thermal evaporation technique and enhancement of thermoelectric properties by post-growth annealing. Jolly Jacob, R. Wahid, A. Ali, R. Zahra, S. Ikram, N. Amin, A. Ashfa, U. Rehman, **Sajad Hussain**, Dheya Shjaa Al-Othmany, S. Zafar Ilyas, K. Mahmood. Physica B: Condensed Matter. 562 (2019) 59–62.
- (53) Tailoring the thermoelectric properties of sol-gel grown CZTS/ITO thin films by controlling the secondary phases. Arslan Ashfaq, J. Jacob, N. Bano, A. Ali, W. Ahmad, K. Mahmood, M.I. Arshad, S. Ikram, U. Rehman, **S. Hussain**. Physica B: Condensed Matter. 558 (2019) 86–90.
- (54) Enhancement of Al-N co-dopant solubility in ZnO by high temperature thermal annealing. A. Faraz, K. Mahmood, A. Ali, M.-I. Arshad, M. Ajaz un Nabi, Akbar Ali, N. Amin, **S. Hussain**. Ceramics International. 45 (2019) 2948–2952.
- (55) Tailoring the structural, magnetic and dielectric properties of Ni-ZnCdFe₂O₄ spinel ferrites by the substitution of lanthanum ions. Salma Ikram , Jolly Jacob , M.I. Arshad , K. Mahmood , A. Ali , N. Sabir , N. Amin , **S. Hussain**. Ceramics International. 45 (2019) 3563–3569.
- (56) Effect of growth temperature on catalyst free hydrothermal synthesis of crystalline SnO₂ micro-sheets **Sajad Hussain**, Jolly Jacob, Nadia Riaz, Khalid Mahmood, Adnan Ali, Nasir Amin, Ghulam Nabi, M. Isa, Mian H.R. Mahmood. Ceramics International. 45 (2019) 4053–4058.
- (57) Length dependent performance of Cu₂O/ZnO nanorods solar cells. **S. Hussain**, Jolly Jacob, Z. Usman, K. Mahmood, A. Ali, M.I. Arshad, Waheed S. Khan, Z. Farooq, M.U. Farooq, A. Ashfaq, U. Rehman. Superlattices and Microstructures. 126 (2019) 181–185.
- (58) Growth of Zn₂GeO₄ thin film by thermal evaporation on ITO substrate for thermoelectric power generation applications. R. Zahra, K. Mahmood, A. Ali, U. Rehman, N. Amin, M.I. Arshad, **S. Hussain**, Mian H.R. Mahmood. Ceramics International. 45 (2019) 312–316.
- (59) Effect of films morphology on the performance of Cu₂O PEC solar cells. **Sajad Hussain**, Chuanbao Cao, Zahid Usman, Ghulam Nabi, Faheem K. Butt, K. Mahmood, A. Ali, M. I. Arshad, N. Amin. Optik- International Journal for Light and Electron Optics. 172 (2018) 72-78.
- (60) Visible light photocatalytic degradation of crystal violet dye and electrochemical detection of ascorbic acid & glucose using BaWO₄ nanorods. M. Younis Ali Khan, Mehvish Zahoor, Ayesha Shaheen, Nuzhat Jamil, M. Imran Arshad, Sadia Zafar Bajwaa, Naveed Akhtar Shad , Rehman Butt, Israat Ali, M. Zubair Iqbal, Aiguo Wu, Ghulam Nabi, **Sajad Hussain**, Tariq Mahmood, Imran Aslam, Waheed S. Khan. Materials Research Bulletin. 104 (2018) 38-43.
- (61) A Review on Novel Eco-Friendly Green Approach to Synthesis TiO₂ Nanoparticles Using Different Extracts. Ghulam Nabi, Qurat-ul-Aain, N. R. Khalid, M. Bilal Tahir, Muhammad Rafique, Muhammad Rizwan, **Sajad Hussain**, Tahir Iqbal, Abdul Majid. Journal of Inorganic and Organometallic Polymers and Materials. 28 (2018) 1552–1564.
- (62) Insights into optoelectronic properties of anti-solvent treated perovskite films. Asmat Nawaz, Ali Koray Erdinc, Burak Gultekin, Muhammad Tayyib, Ceylan Zafer, Kaiying Wang, M Nadeem Akram, Ka Kan Wong, **Sajad Hussain**, Lukas Schmidt-Mende, Azhar Fakhruddin. Journal of Materials Science: Materials in Electronics. 28-20 (2017) 15630-15636.
- (63) Optical and electrical characterization of ZnO/CuO heterojunction solar cells. **Sajad Hussain**, Chuanbao Cao, Ghulam Nabi, Waheed S. Khan, Muhammad Tahir, Muhammad Tanveer, Imran Aslam. Optik - International Journal for Light and Electron Optics. 130 (2017) 272-277.
- (64) Metal-catalyzed synthesis of ultralong tin dioxide nanobelts: Electrical and optical properties with

- oxygen vacancy-related orange emission. F.K Butt, Cb. Cao, T. Mahmood, F. Idrees, M. Tahir, W. S. Khan, Z. Ali, M. Rizwan, M. Tanveer, **Sajad Hussain**, I. Aslam, D. Yu. *Materials Science in Semiconductor Processing*. 26 (2014) 388-394.
- (65) $\text{Cu}_2\text{O}/\text{TiO}_2$ nanoporous thin-film heterojunctions: Fabrication and electrical characterization. **Sajad Hussain**, Cb. Cao, W. S. Khan, G. Nabi, Z. Usman, A. Majid, T. Alharbi, Z. Ali, F. K. Butt, M. Tahir, M. Tanveer, F. Idrees. *Materials Science in Semiconductor Processing*. 25 (2014) 181-185.
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