Said Karim Shah, Ph.D

Associate Professor of Physics,
Department of Physics, Faculty of Physical and Numerical Sciences
Abdul Wali Khan University Mardan Khyber Pakhtunkhwa, 23200 Pakistan,

I. Educational Background

A. Academics

- **(2009-2012) Ph.D in Physics**- (Specialization in Organic Electronics)
  Department of Physics, School of Advance Studies University of Camerino, Italy
- **(2005-2007) M.Phil**- (Applied Physics)
  Department of Applied Physics, Federal Urdu University of Arts, Science and Technology Islamabad.
- **(1996-1998) M.Sc**- (Physics)
  Department of Physics, Gomal University, Pakistan.
- **(1993-1995) B.Sc**- (Mathematics & Physics)
  Peshawar University, Pakistan.

B. Academic Positions

- **(21-06-2018 to date) Associate Professor**:
  Department of Physics, Abdul Wali Khan University Mardan
- **(30-05-2013 20-06-2018) Assistant Professor**:
  Department of Physics, Abdul Wali Khan University Mardan
- **(20-06-2012 to 30-05-2013) Assistant Professor**:
  Department of Physics, International Islamic University Islamabad
- **(15-04-2009 to 06-06-2012) Ph.D Scholar**:
  Department of Physics,School of Advance Studies, University of Camerino,Italy.)
- **(01-03-1999 to 30-03-2009) Senior Subject Specialist**:
  Hamza Army Public School and College Rawalpindi

C. Other Professional Employment

- **(2014-2015) Postdoctoral Research Fellow**
  Institute Polytechniq de Bordeaux, Universit de Bordeaux France.
- **(01-11-2011-to-05-05-2012) Research Scientist**
  (Laboratoire IMS-Site ENSCPB Bordeaux University1, France.

D. Honors, Recognition and Fellowships

- **(2017-2020) NRPU Research Project (4.836,601 Million)**
  Higher Education Commission of Pakistan.
- **(2014-2015) Postdoctoral Research Fellowship**
  Institute Polytechniq de Bordeaux, Universit de Bordeaux France.
- **(01-11-2011-to-05-05-2012) Research Scientist**
  Laboratoire IMS-Site ENSCPB Bordeaux University1, France.
- **(2009-2012) PhD Studentship**
  School of Advance Studies, University of Camerino, Italy.
- **(June 2012) Best Poster Presentation**
  2st Scientific day of the School of Science and Technology- University of Camerino Italy.

E. Research Grants Received

- **Co-PI-(HED Research grant-2022)**: Investigation and Prototyping of Triboelectric Nanogenerators For Flexible Electronic Devices (PKR. 3 Million- Approved).
- **Co-PI-(HEC NRPU-2020)** Nanostructured Catalysts for Electrochemical and Photoelectrochemical Water Splitting: The Evolution of Renewable Hydrogen (PKR. 8.855,162 Million- In progress)
- **PI-(HEC NRPU-2017)**: Synthesis, and Physical Characterization of Metal Oxide Nanostructures towards Organic-Inorganic Hybrid Solar Cells Applications (PKR. 4.836,601 Million-In progress).
- **Co-PI-(HEC NRPU- 2016)**: Synthesis, Processing and Fabrication Of Piezoelectric Material's Nanogenerators For Energy Scavenging Applications and Portable Electronics: Renewable Energy Sources. (PKR. 7.7 Million-Completed)
- **Co-PI-(HEC- 2016)**: Optimum Characterization of Mesoporous Titanium dioxides Thin Film for Solid State dye Synthesized Solar Cells. (PKR. 0.5 Million- Completed)
- **Co-PI-(HEC- 2016)**: Studying Exciton Dynamics and Electron Transport in Organic based Electronic Devices for Energy Applications. (PKR. 0.5 Million- Completed)
- **Co-PI-(HEC- 2015)**: Hydrogen Energy Generation using TiO_2 and Carbon Nanotube Heterojunction. (PKR. 0.5 Million-In Progress)
- **PI-(HEC- 2013)**: Optical and Electrical Characterization of Organic Solar Cells. (PKR. 0.5 Million- Completed)

II. Supervision

a. PhD Thesis

1. **Mr. Irfan Ullah**: 2020
   Thesis Title: *Spectral Characterization of Ln3+ CO-Doped Borate Glasses for Optical Devices*

2. **Ms. Sumaiya Saleem**: 2021-In progress
   Thesis Title: *Hybrid Nanostructures based on Transition-Metal Oxides/Sulfides for Electrocatalytic Hydrogen Evolution*

b. M.Phil Thesis (Supervision)

1. **Mr. Jahangeer Khan: (2014)**
   Thesis Title: *Fabrication and Characterizations of P3HT:PCBM based Photovoltaic Devices.*

2. **Mr. Sartaj Wali: (2015)**
   Thesis Title: *Role of Zinc Oxide on the performance of Inverted Polymeric Solar Cells*

3. **Mr. Basit Ali: (2016)**
   Thesis Title: *Synthesis and electrochemical performance of cathode materials for rechargeable sodium ion batteries*

4. **Mr. Muhammad Ishaq: (2016)**
   Thesis Title: *Optimum Characterizations of Mesoporous Titanium Dioxide Thin Film for Dye Sensitized Solar Cells*

5. **Mr. Farhad Ali: (2017)**
   Thesis Title: *Physical Characterizations Of TiO_x Based Inverted Organic Solar Cells*

6. **Mr. Zamarrud Shah: (2107)**
   Thesis Title: *Synthesis and physical characterization of ZnO Nanorods*

7. **Mr. Irshad Ali: (2017)**
   Thesis Title: *Synthesis and physical characterization of TiO_2 Nanorods*

8. **Mr. Adil Khan: (2018)**
   Thesis Title: *V_5O_2 /Conducting Polymers On Nickel Foams For Super-capacitor Applications*

9. **Mr. Yasir Khan: (2018)**
   Thesis Title: *Synthesis and Characterization Of Al doped ZnO Nanoparticles.*

10. **Mr. Arif Kamal: (2020)**
    Thesis Title: *Synthesis Of Doped (Cu, Ni And Sn) Zinc Oxide Nanostructures for Electron Transport In PV Devices.*

11. **Mr Muhammad Khalid: (2020)**
    Thesis Title: *Fabrication of solid state dye sensitized Solar cells using Efficient and Stable Hole Transport Materials*

12. **Mr Amjid Khan: (2020)**
    Thesis Title: *Synthesis of Graphene-Tin Oxide Nanostructured Thin Films as Effective Electron Transport Layer*

13. **Mr. Kashif Ali: (2020)**
    Thesis Title: *Effect of TiO_2 as Electron Transport Layer for High Performance Inverted Organic Solar Cells.*

14. **Mr. Shakir Ali: (2020)**
    Thesis Title: *Green Synthesis of Aloe Vera And Azadirachta Indica Caped ZnO Nps.*

15. **Mr. Muhammad Jawad Alam Khan: 2021**
    Thesis Title: *Fabrication And Electrical Properties Of Electrospray Deposited Organic Solar Cell.*

16. **Mr. Waleed Ahsan Akbar: (2021)**
    Thesis Title: *Analysis of Device Performance Parameters of P3HT:PCBM based Polymeric Solar Cells.*

17. **Mr. Minat Ullah: 2023**
    Thesis Title: *Synthesis and Characterizations of Silver Nanostructures for Antimicrobial and Ammonia Sensing Applications.*

18. **Mr. Ibrar Ahmad: 2023**
    Thesis Title: *Electrochemical Performance Fe doped NiO Nanostructures via Hydrothermal Synthesis Route.*

19. **Mr. Tauseef ul Haq: 2023**
    Thesis Title: *Fabrication of MoS2/Co3O4 Composite as an Electrode Material for Supercapacitor Application.*

20. **Mr. Jamal Shah: 2023**
    Thesis Title: *Synthesis of SnO2 Flower like Structure Modified with SnSe Nanoparticles for Efficient Supercapacitor Electrode.*

21. **Miss Syeda Nida Alam : 2023**
    Thesis Title: *Optimization of Device Processing Parameters of Bulk Heterojunction Organic Solar Cells.*

22. **Mr. Masood Khan: 2023**
    Thesis Title: *Computational Analysis of Organic-Inorganic Perovskite Solar Cells Using SCAPS-1D.*

23. **Miss Chambaili Shah: 2023**
    Thesis Title: *Simulation and Experimental Study of ZnO based Multilayer Inverted Bulk Heterojunction Organic Solar Cells.*

24. **Mr. Muhammad Ashraf: 2023**
    Thesis Title: *Computational analysis of Cell's performance Parameters of Organic Solar Cells.*

F. Research Interests

- TiO_2 and ZnO Nanostructures
- Organic Semiconductors devices
- Solid State-Dye sensitized Solar cells
- Organic-Inorganic Hybrid Perovskite Solar cells
- Supercapacitors.

G. Research Techniques

I. Invited Conference Presentations/Participations

1. **2nd International Conference on Advances in Materials Science AIMS 2021**, University Of Education, Lahore Pakistan. October 5-6, 2021.
2. **3rd Conference on Frontiers of Nanoscience and Nanotechnology**, PINSTECH Islamabad Pakistan. October 25-27, 2016.
3. **International Scientific Spring** , ISS National Centre for Physics (NCP), Islamabad Pakistan. March 7-11, 2016.
4. 11th International Conference and Workshop on Functional and Nanostructural Materials, **FNMA'14**- Camerino, Italy, September 1-5, 2014.
5. **2st Scientific day** of the School of Science and Technology- University of Camerino Italy, June, 2012.
6. **1st Scientific day** of the School of Science and Technology- University of Camerino Italy, June, 2011.
7. 7th International Conference of Organic Electronic, **ICOE -2011** CNR Headquarters Roma Italy. June 22-24, 2011.
8. 6th International Conference of Organic Electronic, **ICOE -2010** Universite Paris Diderot Paris 7, Paris France. June 22 - 25, 2010.
9. **GNXAS Summer School** Camerino, Department of Physics, University of Camerino (ITALY) August 1- 3, 2009.
10. **XAFS 14 Conference**: Camerino, Department of Physics, University of Camerino, Italy. July 26- 31, 2009.

III. Publications and Creative Works

L. Thesis Title

1. **Ph.D**: Application of Electro-spray deposition for Efficient and Stable Organic Photovoltaic Devices.
   (Advisor: **Prof. Roberto Gunnella**)

2. **M.Phil**: Synthesis and Physical Characterization of Co-Zn Zr nano-particles Ferrite
   (Advisor: **Prof. Asghari Maqsood**)

M. List of Publications

1. I Ullah; C. Sarumaha; A. Angnanon; I Khan; M Shoaib; S. A. Khattak; S Mukamil; S. Kothan; **S. K. Shah**; Wabaidur, Saikh Mohammad; M Shoaib,G. Rooh; J. Kaewkhao, "*Gd2O3 modulated borate glass for enhancement of near infrared emission via Energy transfer from Gd3+ to Nd3+ ion.*, **RSC Adv.**,accepted (2024)-(IF 4.036).

2. I. Ahmad, K. Hayat, M. N Khan,T. Ahmad, F.D. Shams W. Khan, G. Rehman, M. Wazir, V. Tirth, A. Algahtani, **S.K. Shah**, "*Investigating the Antibacterial and Anti-inflammatory Potential of Polyol-Synthesized Silver Nanoparticles (Ag-NPs).*", **ACS Omega**, - (2024) -(IF 4.132).

3. K. Hayat, K. Khan, Matiullah, F. Bibi, V. Tirth, A. Algahtani, K. Safeen, **S.K. Shah**, "*Investigation of Size-Dependent Electrical, Dielectric, and Magnetic Properties of Iron Oxide Nanostructures.*", **Materials Chemistry and Physics**, - (2024) -(IF 4.6).

4. A. Ali; A. D. Khan; M. Anas; T. Ahmad; V. Tirth; A. Algahtani; M. T. Khan; **S. K. Shah**; W. U. Khan, "*Influence of Zr^{4+} substitution on structural, optical and dielectric behavior of $SrSn_{1-x}Zr_xO_3$ $(0.0 \leqslant x \leqslant 0.6)$ sintered ceramics.*, **Optical Materials**, (2024)-(IF 3.9).

5. M. Shah, I. Ahmad,K. Hayat, M. Munawar, M. Mushtaq, W. Ahmad, A. Shah, **S. K. Shah**, "*Utilizing DFT and SCAPS Simulations for Modeling High-Performance MASnI3-based Perovskite Solar Cells.*, **Energy Technology**, (2024)-(IF 4.16).

6. N. Khan; G. Rooh; S Mukamil; S. A. Khattak; M Shoaib; I Khan; I Ullah; T Ahmad; **S. K. Shah**; K. Safeen; M Shoaib, "*Radiation shielding performance of telluriumthallium and telluriumlead oxide glass systems.*, **Radiation Physics and Chemistry**, (2024)-(IF 2.9).

7. M. Z. U. Shah, J. Shah, K. Hayat, **S.K. Shah**, I. Hussain, A. U. Khan, M. S. Shah, H. Hou*, M. Sajjad*, Sameerah. Al-Saeedig, A. Shah**Optimizing performance: Achieving high capacitance and cycling durability in alkaline electrolyte with SnO2/SnSe——AC/KOH-based aqueous hybrid supercapacitor.*" **Journal of Energy Storage.** (2024)75 109662-(IF 9.4).

8. Chambaili, I. Ahmad, E. Ahmad, K. Hayat, N. Ali, V. Tirth, A. Algahtani, A. Shah, **S.K. Shah**, "*ZnO-based Inverted Organic Solar Cells: A Comparative Analysis of Simulation and Experimental Devices*" **Physica Scripta.** (2023)98 115962 -(IF 2.99).

9. K. Hayat, Z. Ali, V. Tirth, A. Algahtani, T.Al-Mughanam, A. H. Alghtani, H. Alrobei, A. Shah, E. Ahmad, **S.K. Shah**, *Investigation of conduction mechanism and UV light response of vertically grown ZnO nanorods on an interdigitated electrode substrate*"**RSC Adv.** (2023)13 20198-20208-(IF 4.036).

10. S. Ayub, **S.K. Shah**, M. Sohaib, S. Saeed, S. A. Khan, S. Abbas, A. Shah "*An operator splitting scheme for numerical simulation of spinodal decomposition and microstructure evolution of binary alloys* **Heliyon** (2023) 9(6) e16597(IF-3.776).

11. A. R. Ahmad, G. Rehman, N. Shah, M. Hamayun, S. Ali, A. Ali, **S.K. Shah**, W. Ullah, M. I. A. Shah, A. F. Alrefaei "*Biosynthesis and characterization of Silver Nanoparticles using Tribulus Terrestris Seeds: Revealed Promising Antidiabetic Potentials* **Molecules** (2023) 28(10) 4203-(IF-4.926).

12. M. Rauf, K. Hayat, **S.K. Shah**, A. Algahtani, V. Tirth, "*Application of ZnO-NRs@Ni-Foam Substrate for Electrochemical Fingerprint of Arsenite Detection in Water.* **RSC Adv.** (2023) 13(21)14530-14538 (IF 4.036).

13. K. Khan, M. Z. U Shah, U. Aziz K. Hayat, M. Sajjad, I. Ahmad, S. A. Ahmad, **S.K. Shah**, A. Shah. *Development of 1.6 V hybridsupercapacitor based on ZnO nanorodes/MnO2 nanowires for next generation electrochemical energy.*" **Journal of Energy Storage.** (2022)922, 116753(IF 4.598).

14. Nayab, S; Alam, A; Ahmad, N; Khan, S; Khan, W; Shams, D; Shah, Muhammad I. A; Ateeq, M; **S.K. Shah** ; Lee, H: "*Thiophene-Derived Schiff base Complexes; Synthesis, Characterization, Antimicrobial Properties, and Molecular Docking* **ACS Omega** (2023) 8(20) 1762017633 (IF 4.132).

15. S. Khattak; F. Dinar; K. Iqbal; M. Abohashrh; I. Ahmad; M. Husain; G. Rooh; S. Zulfiqar; I. Ullah; N. Rahman; T. Khan; G. Khan; **S.K. Shah**; V. Tirth "*Ab-initio Investigation of Structural, Optoelectronic, and Transport Properties of Metal-Alkali-Based Binary Chalcogenides, X2Te [X = Na, K, Rb]: Rb2Te a Potential Candidates for UV-shielding and Thermoelectric Devices* **Journal of Materials Research** (2023) 38 25342549 (IF 2.909)

16. S. Zahoor,S. Sheraz, F.D. Shams, S. Nayab, G. Rehman, **S.K. Shah**, M. I. A. Shah, S. Shams, W. Khan,"*Biosynthesis and anti-inflammatory activity of Zinc Oxide Nanoparticles using leaf extract of Senecio chrysanthemoides* **BioMed Research International**-(2023)(IF 3.246).

17. N. Ullah, A. Shah, J. Sabiu, X. Jiao, A. M. Awwal, N. Pakkaranang *, **S. K. Shah**, B. Panyanak "*A One-Parameter Memoryless DFP Algorithm for Solving System of Monotone Nonlinear Equations with Application in Image Processing*" **Mathematics**-(2023)(IF 2.88)

18. I. Ahmad, K. Hayat, M. Ashraf, M. Imran **S.K. Shah**, "*SCAPS-based Simulation of device parameters of ZnO-based Inverted Polymer Solar Cells.*" **Journal of Optical and Quantum Electronics**- (2023)55:345.(IF 2.794).

19. S.A. Khattak, M. Abohashrh, I. Ahmad, M. Husain, G. Rooh, S. Zulfiqar, I. Ullah; N. Khan, T. Khan; G. Khan; **S.K. Shah**; V. Tirth "*Investigation of Structural, Mechanical, Optoelectronic and Thermoelectric Properties of BaXF3 (X = Co, Ir) Fluoroperovskites: Promising Materials for Optoelectronic and Thermoelectric Applications* **ACS Omega**-(2023) 8(6):52745284.(IF 4.132).

20. **S.K. Shah**, I. Ahmad, J. Shah, T. Ul. Haq, K. Hayat. "*Conventional and Metal Oxide-Based Inverted Polymer Solar Cells: A Comparative Experimental Study.*" **journal of Electronic Materials**- (2023) 52, 14001409 (IF 2.047).

21. K. Khan, M. Z. Khan, U. Aziz, K. Hayat, M. Sajjad, I. Ahmad, S. A. Ahmad, **S. K. Shah**, and A. Shah. "*Development of 1.6 V hybrid supercapacitor based on ZnO nanorodes/MnO2 nanowires for next generation electrochemical energy*" **Journal of Electroanalytical Chemistry**-(2022) 116753.(IF 4.598)

22. I. Ullah, H. Saghaei, **S. K. Shah**, Jahangeer Khan, "*The role of Plasmonic metal-oxides core-shell nanoparticles on the optical absorption of Perovskite solar cells* **Journal of Optical and Quantum Electronics**"- (2022)56 675. (IF 2.794).

23. K.Bibi, I. Ahmad, K. Hayat, M. Ali, **S.K. Shah**, "*Experimental and Computational Analysis of TiO_2 based Inverted Bulk heterojunction Organic Solar Cells.*" **Journal of Electronic Materials**- (2022) 51(9) 5181-5187.(IF 2.047).

24. M. Rauf, S. S. Shah, **S.K. Shah**, S. N. A. Shah, T. Ul Haq, J. Shah, A. Ullah, T. Ahmad, Y. Khan, Md. A. Aziz, and K. Hayat. "*Facile hydrothermal synthesis of zinc sulfide nanowires for high-performance asymmetric supercapacitor.*" **Journal of Saudi Chemical Society**-(2022)26 110514 (IF 4.714).

25. F. Wahed; S. S. Shah; K. Hayat; **S. K. Shah**; Md. A. Aziz, "*Conduction mechanisms and thermoelectric applications of La1-xSrxCoO3 nanofibers* **Journal of Materials Science**" (2022) 57(19) 8828-8844 (IF 4.682).

26. L. Tabassam, M. J. Khan, S. Hussain, S. A. Khattak ,**S. K. Shah**, A. S. Bhatti, "*Structural, Optical and Antimicrobial Characteristics of ZnO Green Nanoparticles*", **Journal of Sol-Gel Science and Technology**(2022) 101 401410. (IF 2.606).

27. Z.U. Rehman, S. Ali, M. Aslam, M. Idrees, A.U. Rehman, J. Iqbal, N Ullah, **S. K. Shah**, S. Batool, "*Optical Absorption Modeling of Plasmonic Dye-Sensitized Solar Cells using Nanospheres/Nanorods bilayer Core-Shell Cu@TiO2 Nanoparticles towards Photovoltaic Applications*", **Journal of Optical and Quantum Electronics** (2021) 53:371 2-13. (IF 2.794).

28. M. S. Khan, B. Gul, G. Khan, M. Benaadad, B. Ghlamallah, S. A. Khattak, T. Khan, S. Zulfiqar, **S. K. Shah**, M. A. Khan, Ab-initio study about the electronic, optical and thermoelectric nature of α, β, and γ-phases of CdS semiconductor: using the accurate m-BJ approach. **Journal of Physica Scripta** (2021) 96 055803. (IF 3.018).

29. I. Ullah, **S. K. Shah**, Gul Rooh, A. Khan; W Boonpa, N. Srisittipokakun, S Kothan Gd3+/Sm3+energy transfer behavior and spectroscopic study of lithium gadolinium magnesium borate for solid state lighting material **Journal of Optical Materials** (2021) 111 110657 (IF 3.754).

30. I. Ullah, **S. K. Shah**, A. Khan, I. Khan, M. Shoaib, J. Kaewkhao, S. A. Khattak, K. Hayat, E. Ahmad, Gul Rooh. "*Luminescence properties of Sm^{3+} doped $Na_2B_4O_7$ Glasses for lighting application*", **Journal of Luminescence** (2021) 230 117700.(IF 4.171)

31. R. Ahmad, S.U. Haq, S. Muhammad, G. Khan, **S. K. Shah**, K.Hayat. R Khan, T. Khan, A. U Rehman, M. Uzair, A. Khan and M. Khan, "*Enhanced Photocatalytic Activity of Ag-coated ZnO Nanorods for Effective Degradation of Methylene Blue*", **Zeitschrift fr Physikalische Chemie**- (2021) 235(5) 511-523. (IF 1.135)

32. A. Amir, A. Ahmad, **S. K. Shah**, N.U Ain, M. Mehmood, Y. Khan, Z.U. Rehman. "*Electrocodeposition of V_2O_5-Polyaniline composite on Ni foam as an electrode for supercapacitor*",**Journal of Materials Science: Materials in Electronics**- (2020) 31,2103521045 (IF 2.779).

33. A. Amir, A. Ahmad, Y. Khan, Z.U. Rehman, N.U Ain, **S. K. Shah**, M. Mehmood, B. Zaman "*Electrodeposited Thick Coatings of V_2O_5 on Ni foam as Binder Free Electrodes for Super-capacitors*",**Bulletin of Materials Science**- 2020 43(1) 1-12 (IF 1.878).

34. **S. K. Shah**, "*Fabrication of Bulk Heterojunction Organic Solar Cells with different configurations Using Electrospray*", **Journal of Nano Express** 1(2) (2020) 020037.

35. S.S. Shah, K. Hayat, S. Ali, **S. K. Shah**, Y. Iqbal, M.Aziz, "*Fabrication and Characterization of $Pb(Zr_0.5Ti_0.5)O_3$ Nanofibers for Nanogenerator Applications*" **Journal of Materials Science: Materials in Electronics**- 2020 31 1585915874. (IF 2.779)

36. I. Ullah, **S. K. Shah**, G. Rooh, N. Srisittipokakun, A. Khan, H.J. Kim, S. kothan, J. Kaewkhao "*Spectroscopic study and energy transfer behavior of Gd^{3+}: Dy^{3+} in $(B_2O_3)0.55-x$ $(Li_2O)0.30(MgO)0.10(Gd_2O_3)0.05$ $(Dy_2O_3)x$ glasses for white emission material*, **Journal of Luminescence** (2020) 226 117380. (IF 4.171)

37. **S. K. Shah**, R. Gunnella, "*Efficient Method of Fabricating Polymeric Solar Cells in Multilayered configuration using Electrospray*", **Journal of Electronic Materials**, (2020) 49(3) 1794-1800. -(IF 2.047).

38. S.U Haq, S.A. Khattak, T. Jan, R. Khan, S. Zulfiqar; I. Ullah, T. Khan, **S. K. Shah**, G. Khan, R. Ahmad, "*Influence of Li-Co co-doping on structural and optical properties as well as on antibacterial activity of ZnO*", **Materials Research Express**, (2019) 6 115037. -(IF 2.024)

39. **S. K. Shah**, K. Hayat, K. Ali, "*Effect of TiO_2 interlayer on the performance of inverted polymeric solar cells*" **Materials Research Express**, (2019) 6 065102. -(IF 2.024)

40. **S. K. Shah**, M. Ishaq, S.A Khattak, I. Ullah, K. Hayat, M. Khan, G. Khan, L. Tabassam, "*Effect of Mesoporous TiO_2 Thicknesses on the Performance of Solid-State Dye-Sensitized Solar Cells*" **Journal of Electronic Materials**, (2019) 48, 696-704. -(IF 2.047).

41. K. Hayat, S. Ali, A.Ur Rahman, **S. K. Shah**, Y. Iqbal, "*Impact of B-site dopants on the electrical properties in the $BaMn_{(1-x)}A_xO_3$ ceramic via low temperature impedance spectroscopy*" **Materials Research Express**, (2018) 5(8) 1-16. -(IF 2.024).

42. B. Ali, A.ur Rehman, F. Gafoor, M. Shahzad, N. Ahmad, **S. K. Shah**, S. M. Abbas, "*Interconnected Mesoporous Na_2FeSiO_4 Nanospheres supported on Carbon nanotubes as a Highly Stable and Efficient Cathode Material for Sodium-ion Battery*" **Journal of Power Sources**, (2018) 396 467-475 -(IF 9.794).

43. I. Ullah, **S. K. Shah**, S. Wali, S.A Khattak, K. Hayat, A. Khan, "*Enhanced efficiency of organic solar cells by using ZnO as an electron transport layer*" **Materials Research Express**, (2017) 4 125505 -(IF 2.024).

44. **S.K. Shah**, Roberto Gunnella, Lionel Hirsch, M. Abbas, "*Stability enhancement of polymer solar cells in trilayer configuration*", **journal of Thin Solid Films** (2017) 640 104-108-(IF 2.358).

45. **S.K. Shah**, J. Khan , I. Ullah, Y. Khan, "*Optimization of active layer thickness, top electrode and annealing temperature for polymeric solar cells*" **AIMS Materials Science** (2017) 4(3) 789-799 -(IF 0.18).

46. M. Ali, **S.K. Shah**, M. Abbas, R. Gunnella, "*Control of heteropolymeric to oligomeric character in electro-spray deposited melanin films*" **Polymer international**, (2016) 65:1267127 -(IF 3.213) .

47. H. Zheng, **S.K. Shah**, M. Abbas, Isabelle Ly, T. Rivera, Rui M. Almeida, L. Hirsch, T. Toupance, S. Ravaine, "*Efficiency enhancement in solid state dye sensitized solar cells by including inverse opals with controlled layer thicknesses*" **Photonic and nanostructures-Fundamentals and Applications**, (2016) 21,13-18 -(IF 3.064).

48. T.Tun Bui, **S.K. Shah**, M. Abbas, X. Sallenave, G. Sini, L. Hirsch, F. Goubard, "*Di(p-methoxyphenyl)amine end-capped tri(p-thiophenylphenyl)amine based molecular glassed as hole transporting materials for solid-state dye-sensitized solar cells*", **RSC Adv.**, (2015) 5, 49590 -(IF 3.119).

49. T.Tun Bui, **S.K. Shah**, M. Abbas, X. Sallenave, G. Sini, L. Hirsch, F. Goubard, "*Carbazole-based molecular glasses as hole transporting materials in solid state dye-sensitized solar cells*", **ChemNanoMat**, (2015) 1, 203 - 210-(IF 3.82).

50. A. Shah, A. Haider, **S.K. Shah**, "*Numerical Simulation of Two-dimensional Dendritic Growth using Phase-field Model*", **World Journal of Mechanics**, (2014) 4, 128-136- (SCI)

51. **S.K. Shah** M. Abbas, M. Ali, L. Hirsch, R. Gunnella, "*Optimal Construction Parameters of Electrosprayed Trilayer Organic Photovoltaic Devices*" **J. Applied Phys. D**, (2014) 47(4), 045106 -(IF 3.409).

52. M. Ali, M. Abbas, **S.K. Shah**, E. Bontempi, A. Di Cicco, R. Gunnella, "*Film Forming Properties of Electrosprayed Organic Heterojunctions*", **European Journal of Applied Physics**, (2013) 62(3), 30202-30210-(IF 0.993).

53. M. Ali, M. Abbas, **S.K. Shah**, R. Tuerhong, A. Generosi, B. Paci, L. Hirsch, R. Gunnella, "*Realization of solution processed multilayer bulk heterojunction organic solar cells by electrospray deposition*", **Organic Electronics**, (2012), 13 2130-2137 (IF 3.868).

54. M. Ali, M. Abbas, **S.K. Shah**, E. Bontempi, P. Colombi, A.Di Cicco, R. Gunnella, "*Variability of physical characteristics of electro-spray poly(3-Hexylthiophene) thin films*", **Journal of Applied Physics**, (2011) 110, 054515-(IF 2.877).

55. M. Abbas, M. Ali, **S.K. Shah**, F. D'Amico, P. Postorino, S. Mangialardo, M. Cestelli Guidi, A. Cricenti, R.Gunnella, "*Control of structural, electronic and optical properties of eumelanin films by electrospray deposition*", **J. Phys. Chem. B**, (2011) 115, 11199 -11207-(IF 3.466).

N. Conference Proceedings

1. T.T Bui, **S.K. Shah**, L. Beouch, C. Plesse, P.-H. Aubert, M. Abbas, X. Sallenave, G.Sini, L. Hirsch, F. Goubard,"*Development of processable amorphous Carbazole based small molecules as potential substitutes of liquid electrolytes in DSSC*" **Baltic Polymer Symposium-Proceedings of the Estonian Academy of Sciences** 64 (2014) ,pp.43

2. M. Abbas, M Ali, R. Gunnella, L. Hirsch, **S.K. Shah**, B. Paci, "*Electrospray Deposition for Organic Solar Cells, Conference Proceedings*", **Dispositifs Electroniques Organiques** - DIELOR Limoges, France November (2012) hal-01004410-

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