

Curriculum Vitae

M. Shamshi Hassan

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Present Status: Working as a Associate Professor in Department of Chemistry, Albaha University, Saudi Arabia.

Academic Qualifications:

- **Ph.D. in Material Science:** Thesis entitled “Preparation and Characterization of Metal Oxides and Perovskite Nanomaterials for Solid Oxide Fuel Cells” at **School of Semiconductor and Chemical Engineering**, Chonbuk National University (CBNU), Korea South, 2010.
- **Master of Science (M. Sc.)** in Physical Chemistry from Dept. Of Chemistry, Aligarh Muslim University, Aligarh, India, 2001.
- **Bachelor of Science (Chemistry)**, Dept. Of Chemistry, Aligarh Muslim University, Aligarh, India, 1999.

Duties and Responsibilities

- Prepare and deliver lectures to undergraduate and/or Master students
- Ensuring students reach their full potential through the use of innovative teaching methods.
- Supervision and counseling of students on theoretical and practical activities.
- Supervise students’ laboratory work.
- Evaluate and grade students’ class work, laboratory performance, assignments, and papers.
- Compile, administer, and grade examinations.
- Maintain student attendance records, grades, and other required records.
- Prepare course materials such as syllabi, homework assignments, and handouts.
- Plan, evaluate, and revise curricula, course content, and course materials and methods of instruction.
- Supervise undergraduate and/or graduate teaching, internship, and research work.
- Keep abreast of developments in their field by reading current literature, talking with colleagues, and participating in professional conferences.
- Initiate, facilitate, and moderate classroom discussions.
- Select and obtain materials and supplies such as textbooks and laboratory equipment.

- To assist the chair and colleagues of the member's department in carrying out the program of the department.
- Conduct research in a particular field of knowledge, and publish findings in professional journals, books and/or electronic media.
- Serve on academic or administrative committees that deal with institutional policies, departmental matters, and academic issues.
- Write grant proposals to procure external research funding.
- Act as advisers to students.
- Any other duties assigned by the Dean.

Research and Work experiences:

✚ **Post Doctoral Experience: 4 years** (In Department of Organic Materials and Fiber Engineering, Chonbuk National University, South Korea)

- Synthesis of Organic, inorganic or hybrid material nanofibers by sol-gel electrospinning process.
- Synthesis of different morphology of pure or hybrid metal oxides (Quantum dots or nanocrystals, 1D, 2D, 3-dimensional and flower shaped morphology).
- Construction of heterostructure materials and Biomaterials.
- Synthesis of materials by different process e.g. Electrospinning, Hydrothermal, Reflux, Solution, Co-precipitation, Combustion method and Sol-gel method.
- Coating and thin film techniques, Screen printing, Doctor blade, Spin coating and dip coating
- Perform materials characterization using techniques such as: X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), optical transmission spectroscopy, atomic force microscopy (AFM), and thermal analysis such as thermogravimetric analysis (TGA), X-Ray Photoelectron Spectroscopy (XPS), UV-Vis spectroscopy, Photoluminescence (PL), FT-IR, RAMAN spectroscopy etc.
- Application of synthesized nano or heterostructured materials as photocatalysts or as electrode in supercapacitors.
- Application of synthesized materials also as Antibacterial, Cytotoxic, electrical and optical material.
- Guiding Mater and Ph. D. students in their research work. Communicating results internally to collaborating researchers.
- Besides strong laboratory skills, have ability to work in a multidisciplinary team and to communicate ideas and results effectively.

✚ **Doctoral Research Fellow**

September 2006- August 2010; at School of Chemical Engineering, Chonbuk National University, Jeonju, Korea.

Research Supervisor: Prof. Dr. Yang O-Bong, Chairman, School of Chemical Engineering, Jeonju, Korea.

During the course of doctoral research studies, I have worked on “**Preparation and Characterization of Metal Oxides and Perovskite Nanomaterials for Solid Oxide Fuel Cells**”.

The salient features of the doctoral research work are as follows:

- Synthesis and designing of various types of metal oxide nanomaterials and perovskite (ABO_3) materials for application as Cathode in Solid Oxide Fuel Cells.
- Doping with different transition and non-transition metal on the A and B-site of ABO_3 type Compound.
- Fabrication of rectangular type pallet of cathode materials and measurement of electrical conductivity of materials.
- Synthesis of cathode and electrolyte materials.
- Deposition of cathode layer on the electrolyte substrate by screen printing method.
- Fabrication of coin type symmetric half cells of Solid Oxide Fuel Cell and measurement of impedance of the half cell.
- Installation of setup for the measurement of current- voltage (I-V) and impedance of materials using potentiostat at high temperature in tubular furnace in different gas atmosphere.

Research Publications

Total number of Publications: 72

Number of Publication as Principal Author: 19

Number of Publication as Corresponding Author: 21

Citations: more than 1906

Number of Book and Chapters: 8

Number of patents: 1 (Korean)

Research Publications

1. Jari S. Algethami, **M. Shamshi Hassan***, Touseef Amna, , Laila S. Alqarni, Mohsen A. M. Alhamami, Amal F. Seliem, M. Faisal, H. Y. Kim, Bismuth Vanadate Decked Polyaniline Polymeric Nanocomposites: The Robust Photocatalytic Destruction of Microbial and Chemical Toxicants, **Materials**, 16(9) (2023) 3314.
2. Jari S. Algethami, **M. Shamshi Hassan***, Touseef Amna, , Faheem A Sheikh, Mohsen A. M. Alhamami, Amal F. Seliem, M. Faisal, H. Y. Kim, Nanotextured CeO_2-SnO_2 composite: Efficient photocatalytic, antibacterial and energy storage fibers, **Nanomaterials**, 13(6) (2023)1001.
3. **M. Shamshi Hassan***, Touseef Amna, Laila S. Alqarni, Hussain S Alqahtani, Yaser A Alnaam, Saleh Almusabi, Ahmed A. Alzahrani “High aspect ratio $TiO_2-Mn_3O_4$ heterostructure: Proficient nanorods for pathogen inhibition and supercapacitor application” **Material Science and Technology**, Accepted (2023).
4. Muheeb Rafiq, Rumysa Saleem Khan, Taha Umair Wani, Anjum Hamid Rather, Touseef Amna, **M. Shamshi Hassan**, Sami-ullah Rather, Faheem A. Sheikh “Improvisations to electrospinning techniques and ultrasonication process to nanofibers, for high porosity:

Ideal for cell infiltration and tissue integration” **Materials Today Communications** 35 (2023) 105695.

5. Rumysa S. Khan, Anjum H. Rather, Taha U. Wani, Sami-ullah Rather, Touseef Amna, **M. Shamshi Hassan**, Faheem A. Sheikh “Recent trends using natural polymeric nanofibers as supports for enzyme immobilization and catalysis” **Biotechnology and Bioengineering** 120(2023)22-40.
6. Aisha A. Alshahrani, Ali Q. Alorabi, **M. Shamshi Hassan***, Touseef Amna, Mohamed Azizi, “Chitosan-Functionalized Hydroxyapatite-Cerium Oxide Heterostructure: An Efficient Adsorbent for Dyes Removal and Antimicrobial Agent”, **Nanomaterials** 12(2022), 2713.
7. Jari S. Algethami, **M. Shamshi Hassan***, Ali Q Alorabi, Nabil.A.Alhemiary, Ahmed M Fallatah, Yaser Alnaam, Saleh Almusabi, Touseef Amna “Manganese Ferrite-Hydroxyapatite Nanocomposite Synthesis: Biogenic waste remodeling for Water decontamination” **Nanomaterials** 12(10)(2022) 1631.
8. Ali Q. Alorabi¹, **M. Shamshi Hassan***, Jari S. Algethami, Neazar Essam Baghdadi, Synthesis and characterization of Ag-AgVO₃/Cu₂O heterostructure with improved visible-light photocatalytic performance, **Science Progress**, 104(4)(2021)1-13.
9. Ali Q. Alorabi, **M. Shamshi Hassan***, Mohammad Mahboob Alam, Sami A. Zabin , Nawaf. Alsenani, Neazar Essam Baghdadi, Natural Clay as a Low-Cost Adsorbent for Crystal Violet Dye Removal and Antimicrobial Activity, **Nanomaterials** 11(11)(2021) 2789.
10. Touseef Amna, **M. Shamshi Hassan**, Mohamed H. El-Newehy, Tariq Alghamdi, Meera Moydeen Abdulhameed, Myung-Seob Khil, Biocompatibility Computation of Muscle Cells on Polyhedral Oligomeric Silsesquioxane-Grafted Polyurethane Nanomatrix, **Nanomaterials** 11(11)(2021) 2966.
11. **M. Shamshi Hassan***, Vineet Tirth, Ali Q. Alorabi, Firoz Khan, Ali Algahtani, Touseef Amna, Bi₂WO₆ nanoflakes incorporated carbon nanofibers to control biological and chemical pollutants: bifunctional application, **Chemical Engineering Communications** (2021)1-8.
12. Touseef Amna, **M. Shamshi Hassan**, Faheem A Sheikh, Hae Cheon Seo, Hyun-Chel Kim, Najla Alotaibi, Thamraa Alshahrani, Myung-Seob Khil, Natural mulberry biomass fibers doped with silver as an antimicrobial textile: a new generation fabric, **Textile Research Journal**, 91(21-22)(2021)2581-2587.
13. Touseef Amna, Abdullah A. A. Alghamdi, Ke Shang, **M. Shamshi Hassan**, *Nigella Sativa*-Coated Hydroxyapatite Scaffolds: Synergetic Cues to Stimulate Myoblasts Differentiation and Offset Infections, **Tissue Engineering and Regenerative Medicine**, 18(5)(2021)787-795.
14. Touseef Amna, Abdullah A. A. Alghamdi, Rizwan Khan, Ke Shang, **M. Shamshi Hassan**, Myung-Seob Khil, Study on the effects of Ag-SiO₂ core shell nanoparticles on biocompatibility appraisal of myoblasts, **Cytology and Genetics** 55(2021) 199-204.
15. Ali Q. Alorabi, **M. Shamshi Hassan***, Mohamed Azizi, Fe₃O₄-CuO-activated Carbon composite as an efficient adsorbent for bromophenol blue dye removal from aqueous solutions, **Arabian Journal of Chemistry**, 13(2020) 8080-8089.

16. **M. Shamshi Hassan***, One Pot Synthesis of CoTiO₃-TiO₂ Composite Nanofibers and its Application in Dye Degradation, **International Journal of Chemoinformatics and Chemical Engineering**, 8(2) (2019) 47-56.
17. **M. Shamshi Hassan***, Facile synthesis of unique BiVO₄ nano-knitted hollow cage and its application in environmental remediation, **Zeitschrift Naturforschung A**, 74(3)a (2019) 259-263.
18. Touseef Amna, Fatehia N Gharsan, Ke Shang, **M. Shamshi Hassan**, Myung-Seob Khil, Inho Hwang. Electrospun twin fibers encumbered with intrinsic antioxidant activity as prospective skin dressing, **Macromolecular Research** 27 (2019)1-8.
19. Su-Jung Seo, Touseef Amna, **M. Shamshi Hassan**, Hyun-Chel Kim, Myung-Seob Khil, MoO₂-decorated TiO₂ nanofiber composite as visible-light photocatalyst and electrode for supercapacitor application, **Textile Science and Engineering**, 55(4)(2018)239-246.
20. Byoung Woo Chae, Touseef Amna, **M. Shamshi Hassan***, Salem S. Al-Deyab, Myung-Seob Khil, CeO₂-Cu₂O composite nanofibers: Synthesis, characterization, photocatalytic and electrochemical application, **Advanced Powder Technology**, 28 (2017) 230-235.
21. Musarat Amina, Touseef Amna, Nawal M. Al-Musayeib, Salem S. Al-Deyab, Sami A. Zabin, **M. Shamshi Hassan**, Myung-Seob Khil "Encapsulation of β -Sitosterol in Polyurathane by Sol-Gel electrospinning" **Applied Biochemistry and Biotechnology** 182 (2017) 624-634.
22. Hossein Bayahia, Mohammed Saad Mutlaq Al-Ghamdi, **M. Shamshi Hassan**, Touseef Amna, Facile synthesis of ZnO-Cu₂O composite nanoparticles and effect of Cu₂O doping in ZnO on antimicrobial activity, **Modern Chemistry and Applications** 5 (2017) 1-4.
23. Musarat Amina, Touseef Amna, **M. Shamshi Hassan**, Nawal M. Al-Musayeib, Salem S. Al-Deyab, Myung-Seob Khil "Low temperature synthesis of Manganese tungstate nanoflowers with antibacterial potential: Future material for water purification" **Korean Journal of Chemical Engineering**, 33 (2016)3169.
24. Touseef Amna, **M. Shamshi Hassan**, Salem S. Al-Deyab, Myung-Seob Khil, Inho Hwang "Impact on gene expression in response to silver-decorated titania nanomatrix using an in vitro satellite cell culture model" **Polymer Bulletin**, 73(2016) 1855.
25. **M. Shamshi Hassan**, Rizwan Khan, Touseef Amna, Jiyeong Yang, In-Hwan Lee, Min-Young Sun, Mohamed H. EL-Newehy, Salem S. Al-Deyab, Myung-Seob Khil, The influence of synthesis method on size and toxicity of CeO₂ quantum dots: potential in the environmental remediation, **Ceramic International**, 42 (2016) 576-582.
26. **M. Shamshi Hassan***, Touseef Amna, Salem S Al-Deyab, Hyun-Chel Kim, Myung-Seob Khil, Monodispersed 3D MnWO₄-TiO₂ composite nanoflowers photocatalysts for environmental remediation, **Current Applied Physics**, 15 (2015) 753.
27. Young-Sang Jang, Touseef Amna, **M. Shamshi Hassan*** "Hyun-Chel Kim, Jong-Hui Kim, Sang-Ho Baik, Myung-Seob Khil, Nanotitania/mulberry fibers as novel textile with anti-yellowing and intrinsic antimicrobial properties" **Ceramics International**, 41 (2015) 6274.
28. Faheem A. Sheikh, Javier Macossay, Travis Cantu, Xujun Zhang, **M. Shamshi Hassan**, M. Esther Salinas, Chakavak S. Farhangi, Hassan Ahmad, Hern Kim, Gary L. Bowlin "Imaging, spectroscopy, mechanical, alignment and biocompatibility studies of electrospun medical grade polyurethane (Carbothane™ 3575A) nanofibers and composite nanofibers containing multiwalled carbon nanotubes" **Journal of the Mechanical Behavior of Biomedical Materials**, 41(2015) 189-198.

29. Won-Hui Jeong, Touseef Amna, Yu-Mi Ha, **M. Shamshi Hassan***, Hyun-Chel Kim, Myung-Seob Khil, Novel PANI nanotube@TiO₂ composite as efficient chemical and biological disinfectant, **Chemical Engineering Journal** 246 (2014) 204-210.
30. Young-Sang Jang, Touseef Amna, **M. Shamshi Hassan***, Ja-Ram Gu, Hyun-Chel Kim, Jong-Hui Kim, Sang-Ho Baik, Myung-Seob Khil, Improved supercapacitor potential and antibacterial activity of bimetallic CNFs-Sn-ZrO₂ nanofibers: Fabrication and characterization, **RSC Advances** 4 (2014) 17286-17273.
31. Rizwan Khan, **M. Shamshi Hassan**, Han-Su Cho, Alexander Y. Polyakov, Myung-Seob Khil, In-Hwan Lee “Facile low-temperature synthesis of ZnO nanopyramid and its application to photocatalytic degradation of methyl orange dye under UV irradiation” **Materials Letters** 133(2014) 224-227.
32. Rizwan Khan, **M. Shamshi Hassan**, Lee-Woon Jang, Jin Hyeon Yun, Haeng-Keun Ahn, Myung-Seob Khil, In-Hwan Lee “Low-temperature synthesis of ZnO quantum dots for photocatalytic degradation of methyl orange dye under UV irradiation” **Ceramics International** 40 (2014) 14827-1483.
33. Ammar M. Hamza, **M. Shamshi Hassan**, Ahmed N. Awad “Synthesis and film formation of neodymium oxides nanorods: electrical properties study” **Advanced Materials Research** 925 (2014) 406-410.
34. Javier Macossay, Faheem A. Sheikh, Travis Cantu, Thomas M. Eubanks, M. Esther Salinas, Chakavak S. Farhangi, Hassan Ahmad, **M. Shamshi Hassan**, Myung-seob Khil, Shivani K. Maffi, Hern Kim, Gary I. Bowlin “Imaging, spectroscopic, mechanical and biocompatibility studies of electrospun Tecoflex® EG 80A nanofibers and composites thereof containing multiwalled carbon nanotubes” **Applied Surface Science** 321(2014) 205-213.
35. Touseef Amna, **M. Shamshi Hassan**, Myung-Seob Khil, Hak-Kyo Lee, I. H. Hwang “Electrospun nanofibers of ZnO-TiO₂ hybrid: Characterization and potential as extracellular scaffold for supporting myoblasts” **Surface and Interface Analysis** 46 (2014) 72-76.
36. Touseef Amna, **M. Shamshi Hassan**, Jieun Yang, Myung- Seob Khil, Ki-Duk Song, Jae-Don Oh, I.H. Hwang “Virgin olive oil blended poly(urethane) micronanofibers ornamented with copper oxide nanocrystals for biomedical applications” **International Journal of Nanomedicine** 9 (2014) 891-898.
37. Touseef Amna, **M. Shamshi Hassan**, Myung-Seob Khil, I. H. Hwang “Interaction of magnetic cobalt based titanium dioxide nanofibers with muscle cells: *in vitro* cytotoxicity evaluation” **Journal of Sol-Gel Science and Technology** 69 (2014) 338-344.
38. Musarat Amina, **M. Shamshi Hassan**, Nawal Musayeib Al Musayeib, Touseef Amna, Myung-Seob Khil “Improved antibacterial activity of HAP garlanded PLGA ultrafine fibers incorporated with CuO: Synthesis and characterization” **Journal of Sol-Gel Science and Technology** 71(2014) 43-49.
39. Touseef Amna, **M. Shamshi Hassan**, Myung-Seob Khil, Inho Hwang “Biological interactions of muscle precursor C2C12 cells with biomimetic nano-hydroxyapatite/poly(lactide-co-glycolide) scaffoldings” **Ceramic International** 40(2014)14305-14311.

40. **M. Shamshi Hassan***, Touseef Amna, I. H. Hwang, Myung-Seob Khil “One-step facile construction of high aspect ratio Fe₃O₄ decorated CNFs with distinctive porous morphology: Potential multiuse expectations” **Colloids and Surfaces B: Biointerfaces** 106 (2013) 170-175.
41. **M. Shamshi Hassan**, Touseef Amna, Hak Yong Kim, Myung-Seob Khil “Enhanced bactericidal effect of novel CuO/TiO₂ composite nanorods and a mechanism thereof” **Composites Part B: Engineering** 45 (2013) 904-910.
42. **M. Shamshi Hassan**, O-Bong Yang “Enhanced performance of nanocrystalline Cu doped Pr_{0.6}Sr_{0.4}FeO₃ as Cathode for Solid Oxide Fuel Cell” **Solid State Communications** 156 (2013) 59-63.
43. **M. Shamshi Hassan***, Touseef Amna, Myung-Seob Khil “Synthesis of high aspect ratio CdTiO₃ nanofibers via electrospinning: characterization and photocatalytic activity” **Ceramics International** 40 (2013) 423-427.
44. **M. Shamshi Hassan***, Touseef Amna, Faheem A. Sheikh, Salem S Al-Deyab, Kyung Eun Choi, I. H. Hwang, Myung-Seob Khil “Bimetallic Zn/Ag doped polyurethane spider net composite nanofibers: A novel multipurpose electrospun mat” **Ceramic International** 39 (2013) 2503-2510.
45. Yu-Mi Ha, Touseef Amna, Mi-Hee Kim, Hyun-Chel Kim, **M. Shamshi Hassan***, Myung-Seob Khil “Novel silicified PVAc/POSS composite nanofibrous mat via facile electrospinning technique: potential scaffold for hard tissue engineering” **Colloids and Surfaces B: Biointerfaces** 102 (2013) 795-802.
46. Abdalla Abdal-hay, Juhyun Lim, **M. Shamshi Hassan**, Jae Kyoo Lim “Ultrathin Conformal Coating of Apatite Nanostructures onto Electrospun Nylon 6 Nanofibers: Mimicking the Extracellular Matrix, **Chemical Engineering Journal** 228 (2013) 708-716.
47. Touseef Amna, Nasser A. M. Barakat, **M. Shamshi Hassan**, Yang You Bing, Ki-Taek Nam, Hem Raj Pant, Hak Yong Kim “Camptothecin loaded Poly (ϵ -caprolactone) nanofibers via one-step electrospinning and their cytotoxicity impact” **Colloids and Surfaces A: Physicochemical and Engineering Aspects** 431(2013) 1-8.
48. Touseef Amna, **M. Shamshi Hassan**, Muthuraman Pandurangan, Myung-Seob Khil, Hak-Kyo Lee, I. H. Hwang “Characterization and potent bactericidal effect of Cobalt doped Titanium dioxide nanofibers” **Ceramics International** 39 (2013) 3189-3193.
49. Musarat Amina, Touseef Amna, **M. Shamshi Hassan***, Myung-Seob Khil*, “Facile single mode electrospinning way for fabrication of natural product based silver decorated polyurethane nanofibrous membranes: Prospective medicated bandages” **Colloids and Surfaces A: Physicochemical and Engineering Aspects** 425 (2013) 115-121.
50. Touseef Amna, **M. Shamshi Hassan**, Hoa Van Ba, Myung-Seob Khil, Hak-Kyo Lee, I. H. Hwang “Electrospun Fe₃O₄/TiO₂ hybrid nanofibers and their in vitro biocompatibility: Prospective matrix for satellite cell adhesion and cultivation” **Materials Science and Engineering C** 33 (2013) 707-713.
51. Touseef Amna, **M. Shamshi Hassan**, Ayman Yousef, Amrita Mishra, Nasser A. M. Barakat, Myung-Seob Khil, Hak Yong Kim “Inactivation of foodborne pathogens by NiO/TiO₂ composite nanofibers: A novel biomaterial system. **Food and bioprocess technology: An International Journal** 6 (2013) 988-996.
52. Touseef Amna, Hoa Van Ba, **M. Shamshi Hassan**, Myung-Seob Khil, Hak-Kyo Lee, I. H. Hwang “Apoptosis induced by copper oxide quantum dots in cultured C2C12 cells via

caspase 3 and caspase 7: A study on cytotoxicity assessment” **Applied Microbiology and Biotechnology** 97 (2013) 5545-5553.

53. Touseef Amna, **M. Shamshi Hassan**, Faheem A. Sheikh, Hak Kyo Lee, Kang-Seok Seo, Duhak Yoon, I. H.Hwang “Zinc oxide doped poly(urethane) spider-web nanofibrous scaffold via one-step electrospinning: A novel matrix for tissue engineering” **Applied Microbiology and Biotechnology** 97 (2013) 1725-1734.
54. Touseef Amna, **M. Shamshi Hassan**, Dipendra Raj Pandeya, Myung-Seob Khil, I.H. Hwang “Classy nonwovens based on animate *L.gjasseri*- inanimate poly(vinyl alcohol): upstream application in food engineering” **Applied Microbiology and Biotechnology** 97 (2013) 4523-4531.
55. **M. Shamshi Hassan**, Touseef Amna, Yang O- Bong, Mohamed H. El-Newehy, Salem S Al-Deyab, Myung-Seob Khil “Smart Copper Oxide Nanocrystals: synthesis, characterization, electrochemical and potent antibacterial activity” **Colloids and Surfaces B: Biointerfaces** 97 (2012) 201-206.
56. **M. Shamshi Hassan***, Touseef Amna, Salem S Al-Deyab, Hyun-Chel Kim, Tae-Hwan Oh, Myung-Seob Khil “Toxicity of Ce₂O₃/TiO₂ composite nanofibers against *S. aureus* and *S. typhimurium*: A novel electropsun material for disinfection of food pathogens” **Colloids and Surfaces A: Physicochemical and Engineering Aspects** 415 (2012) 268-273.
57. **M. Shamshi Hassan**, Touseef Amna, Yang O-Bong, Hyun-Chel Kim, Myung-Seob Khil “TiO₂ nanofibers doped with rare earth elements and their Photocatalytic Activity” **Ceramic International** 38(2012) 5925-5930.
58. **M. Shamshi Hassan**, Touseef Amna, Dipendra Raj Pandeya, A. M. Hamza, Yang You Bing, Hyun-Chel Kim, Myung-Seob Khil “Controlled synthesis of Mn₂O₃ nanowires by hydrothermal method and their bactericidal and cytotoxic effect: A promising future material” **Applied Microbiology and Biotechnology** 95(1) (2012) 213-222.
59. **M. Shamshi Hassan**, Touseef Amna, Amrita Mishra, Soon-Il Yun, Hyun-Chel Kim, Hak-Yong Kim, Myung-Seob Khil “A mechanistic study of the antibacterial effect of novel electrospun TiO₂ nanorods on a panel of pathogenic bacteria” **Journal of Biomedical Nanotechnology** 8 (2012) 1-8.
60. Touseef Amna, **M. Shamshi Hassan**, Woon-Seob Shin, Hoa Van Ba, Hak-Kyo Lee, Myung-Seob Khil, I. Hwang “TiO₂ nanorods via one-step electrospinning technique: A novel nanomatrix for mouse myoblasts adhesion and propagation” **Colloids and Surfaces B: Biointerfaces** 101 (2012) 424-429.
61. Touseef Amna, **M. Shamshi Hassan**, Ki-Taek Nam, Myung-Seob Khil, Hak Yong Kim “Preparation, characterization and cytotoxicity of CPT/Fe₂O₃ embedded PLGA ultrafine composite fibers: A synergistic approach to develop promising anticancer material” **International Journal of Nanomedicine** 7 (2012) 1659-1670.
62. Hanan M. Al-Youssef, Musarat Amina, **M. Shamshi Hassan**, Touseef Amna, Ki-Taek Nam, Jin Won Jeong, Hak Yong Kim “Herbal drug loaded PLGA ultrafine fibers: Interaction with pathogenic bacteria” **Macromolecular research** 21 (2012) 589-598.
63. Ayman Yousef, Nasser barakat, Touseef amna, Salem Al-Deyab, **M. Shamshi Hassan**, Abdallah Abdel-hay, Hak-Yong Kim “Inactivation of pathogenic *K. pneumonia* by CuO/TiO₂ nanofibers: A multifunctional nanomaterial via one-step electrospinning” **Ceramics International** 38 (2012) 4525-4532.

64. Touseef Amna, **M. Shamshi Hassan**, Nasser A. M. Barakat, Dipendra Raj Pandeya, Seong Tshool Hong, Myung-Seob Khil, Hak Yong Kim “Antibacterial activity and interaction mechanism of electrospun Zinc doped Titania nanofibers” **Applied microbiology and biotechnology** 93 (2012) 743-751.
65. Mi-Hee Kim, Yu-Mi Ha, Min-A Kim, **M. Shamshi Hassan**, Ja-Lam Gu, Hyun-Chel Kim and Myung-Seob Khil, “Effect of adding POSS on the polymerization and thermal properties of polyacrylonitrile,” *Textile Science and Engineering* **2012**, 49 (6), 402-410.
66. **M. Shamshi Hassan**, Young-Sic Kang, Byoung-Suhk Kim, Ick-Soo Kim, Hak-Yong Kim, Myung-Seob Khil “Synthesis of praseodymium oxide nanofiber by electrospinning” **Superlattices and Microstructures** 50 (2011)139-144.
67. Musarat Amina, Touseef Amna, **Shamshi Hassan**, Hanan M. Al-Youssef, Azza M. El-shafae, Hak Yong Kim, Myung-Seob Khil “Poly(urethane)/*G. mollis* composite nanofibers for biomedical applications” **Journal of Nanoengineering and Nanomanufacturing** 2 (2012) 1-6.
68. **M. Shamshi Hassan**, Kyung-Bo Shim, O-Bong Yang “Electrocatalytic Behavior of Calcium Doped LaFeO₃ as Cathode Material for Solid Oxide Fuel Cell” **Journal of Nanoscience and Nanotechnology** 11(2011)1-5.
69. **M. Shamshi Hassan**, M.Shaheer Akhtar, Kyung-Bo Shim, O-Bong Yang “Morphological and Electrochemical Properties of Crystalline Praseodymium Oxide Nanorods” **Nanoscale Research Letters** 5(2010)735–740.
70. S.R. Dhage, **M.S. Hassan**, O-Bong Yang “Low temperature fabrication of hexagon shaped h-MoO₃ nanorods and its phase transformation” **Materials Chemistry and Physics** 114 (2009) 511-514.
71. Sanjay Dhage, Hyun-Choel Lee, **M. Shamshi Hassan**, M. Shaheer Akhtar, Chong-Yeal Kim, Jung Min Sohn, Ki-Ju Kim, Hyung-Shik Shin, O-Bong Yang “Formation of SiC nanowhiskers by carbothermic reduction of silica with activated carbon” **Materials Letters** 63(2009)174-176.
72. Inamur Rahman Qazi, Woo-Jin Lee, **M. Shamshi Hassan**, O-Bong Yang “Photocatalytic degradation of methylene Blue Dye Under visible light over Cr doped SrTiO₃ nanoparticles” **Journal of Nanoscience and Nanotechnology** 10 (2010) 3430-3434.

Awards/Fellowships

- ✚ Recipient of research grant from the Deanship of Scientific Research at Albaha University, grant number 1441/3 (2020).
- ✚ Recipient of prestigious research grant award from National Research Foundation of Korea (NRF), Ministry of Education (Project no. 2014R1A1A2007175), South Korea for 3 years (2014-2016).
- ✚ Recipient of research grant from the Deanship for Scientific Research, University of Albaha, Albaha, Ministry of Higher Education (Project No. 54-1436), Kingdom of Saudi Arabia (KSA) (19.08.2015).

Korean Patent application filed

- **M. Shamshi Hassan**, Touseef Amna, Yu-Mi Ha, Myung-Seob Khil “One-step facile construction of high aspect ratio TiO₂ nanorods: Characterization and versatile applications (KPA No.-10-2013-0071717)

Book and Chapters

1. Touseef Amna, **M. Shamshi Hassan**, Fatehia Nasser Gharsan, Suriya Rahman, Faheem A. Sheikh “Nanotechnology in Drug Delivery Systems: Ways to Boost Bioavailability of Drugs” (**Chapter 10**) from the book titled: “Nanotechnology for Infectious Diseases” **Springer Link (2022)**. https://link.springer.com/chapter/10.1007/978-981-16-9190-4_10
2. **Editors:** Touseef Amna and **M. Shamshi Hassan** “Innovative Approaches for Nanobiotechnology in Health care systems Pages: 424. DOI: 10.4018/978-1-7998-8251-0 (<https://www.bookdepository.com/Innovative-Approaches-for-Nanobiotechnology-Healthcare-Systems-Touseef-Amna/9781799882510>) in Advances in Medical Technologies and Clinical Practice, publisher- IGI Global (Published 2022)
3. **M. Shamshi Hassan**, Ali Q. Alorabi, Touseef Amna “Electrospun Nanofibers for Scheming Water Pollution: Pioneer Strategies” (Chapter 11) from the book titled: “Innovative Approaches for Nanobiotechnology in Healthcare Systems” **IGI Global (2021)**.
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1. Aisha A. Alshahrani, Ali Q. Alorabi, M. Shamshi Hassan, Touseef Amna “Chitosan-Functionalized Hydroxyapatite-Cerium Oxide Heterostructure: An Efficient Adsorbent for Dyes Removal and Antimicrobial Agent” presented poster at ICES2023-International Conference And Exhibition For Science, held at King Saud University, Riyadh, Saudi Arabia from February 06-08, 2023, **Poster No. 2127**.
2. Touseef Amna*, M. Shamshi Hassan, Ke Shang, Inho Hwang “Protective role of capsaicin against inflammatory cytokines induced by lipopolysaccharide” Presented as poster at KOSFA-50th International Symposium and Annual Meeting-cultures and

ethics of animal originated foods- held at Jeju National University, South Korea from 24th to 26th May 2018. **Poster No. P-141, page number 396.**

3. Touseef Amna*, M. Shamshi Hassan, Inho Hwang “Antimicrobial applications of ZnO nanoflowers: A novel source for complete inhibition of pathogens” Presented as poster at KOSFA-50th International Symposium and Annual Meeting-cultures and ethics of animal originated foods- held at Jeju National University, South Korea from 24th to 26th May 2018. **Poster No. P-303, page number 433.**
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5. Su-Jung Seo, **M. Shamshi Hassan**, Myung-Seob Khil “TiO₂ nanorods@MoO₃ nanoparticles heterostructures as visible light photocatalyst and electrode for supercapacitor” The Korean Fiber Society annual fall conference, Busan, South Korea (2015. 11.15~11.06)
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8. **M. Shamshi Hassan**, Touseef Amna, Myung-Seob Khil “**One dimensional PANI-TiO₂ nanocomposites-synthesis, properties and applications**” Spring Conference of Korean Fiber Society, Daejeon, South Korea (2014.05.08~09) (Poster No. 3PS-40).
9. **M. Shamshi Hassan**, Touseef Amna, Myung-Seob Khil “**Bimetallic Zn/Ag doped polyurethane spider net composite nanofibers: A novel multipurpose electrospun mat**” Spring Conference of Korean Fiber Society, Daejeon, South Korea (2014.05.08~09) (Poster No. 3PS-42).
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11. **M. Shamshi Hassan**, Touseef Amna, Myung-Seob Khil “Enhanced bactericidal effect of novel CuO/TiO₂ composite nanorods and a mechanism thereof” **Spring Conference of Korean Fiber Society**, Daegu, Korea South (2013.04.16~18)
12. **M. Shamshi Hassan**, Touseef Amna, Myung-Seob Khil “High Aspect Ratio Fe₃O₄ supplemented CNFs with Potential uses via Electrospinning, **The 12th Asian Textile Conference (ATC-12)**, Shanghai, China (2013. 10.23~26).
13. Young-Sang Jang, Yu-Mi Ha, **M. Shamshi Hassan**, Myung-Seob Khil “CNFs-ZrO₂ composite nanofibers: preparation, characterization and its application” **The 12th Asian Textile Conference (ATC-12)**, Shanghai, China (2013. 10.23~26).
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18. Yu-Ri Choi, Touseef Amna, R. Nirmala, **M. Shamshi Hassan**, Nasser A. M. Barakat, Hak Yong Kim, “Electrospun zinc-doped titania nanofibers as efficient antibacterial agents” **Polymer conference** held in Daejeon, South Korea (2012. 04. 12- 13. 04)
19. Kyung Soo Jeon, Touseef Amna, **M. Shamshi Hassan**, Jin Won Jung, Ayman Yousef, R. Nirmala, Nasser A. M. Barakat, Hak Yong Kim, “NiO/TiO₂ composite nanofibers: Fabrication , characterization and antibacterial effect on foodborne pathogens” **2nd International Conference on Electro-spinning**, Jeju, South Korea (2012. 05. 29 ~ 01. 06.)
20. Yu-Mi Ha, **M. Shamshi Hassan**, Hak-Yong Kim and Myung-Seob Khil “Silicificated MF/PP (Mulberry Fibers and PVAc/POSS) Composite Nanofibrous Mats as Scaffold for Tissue Enginnering” **The 4th International Symposium on High-Tech Fiber Engineering for Young Researcher**, Shinshu University, Ueda, Japan (2011.08.29~09.04)
21. Mi-Hee Kim, Do-Hwan Kim, **M. Shamshi Hassan**, Hak-Yong Kim, Myung-Seob Khil “Hybrid Organic-Inorganic electrospun nanofibers: Thermal, Mechanical, Condctivity and FT-IR spectroscopic studies” **The 4th International Symposium on High-Tech Fiber Engineering for Young Researcher**, Shinshu University, Ueda, Japan (2011.08.29~09.04)
22. Cheol-Ho Lee, **M. Shamshi Hassan**, Hak-Yong Kim, Myung-Seob Khil “Pr doped Titania Nanofibers: Synthesis, characterization and its photocatalytic application” **The 4th International Symposium on High-Tech Fiber Engineering for Young Researcher**, Shinshu University, Ueda, Japan (2011.08.29~09.04)
23. **M. Shamshi Hassan**, Ja-Lam Gu, Ick-Soo Kim, Hak-Yong Kim, Myung-Seob Khil “Anatase phase metal doped Titania nanofibers synthesis and its photocatalytic application” **Nanokorea 2011**, KINTEX, Korea South (2011.08.24~26)
24. **M. Shamshi Hassan**, Touseef Amna, Hak Yong Kim, Myung-Seob Khil “Selective Toxicity of Nickel doped Titania nanofibers toward a Panel of pathogenic bacteria Fabricated via electrospinning” **The 11th Asian Textile Conference (ATC-11)**, Daegu, Korea South (2011.11.01~04)
25. **M. Shamshi Hassan**, Ick-Soo Kim, Hak-Yong Kim, Myung-Seob Khil “Characterization of anatase phase Titania nanofibers and its photocatalytic application” **The 11th Asian Textile Conference (ATC-11)**, Daegu, Korea South (2011.11.01~04).
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application in the dye sensitized solar cell” The Korean Institute of Chemical Engineers (KICChE spring meeting), Ulsan, Korea, (2007.04.09~20).

Other Experience

- ✧ **Guest Editor :Nanomaterials**, Journal by MDPI, **Special Issue** “Prospects of Bioinspired and Biomimetic Materials”.
- ✧ Taking part time classes to the graduate and undergraduate student in Chonbuk National University.
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