



Dr. Saghir Hussain

Phone: +923035502076

E-mail: saghir.hussain@bzu.edu.pk, saghirchemist786@gmail.com

Address: Institute of Chemical Sciences, BZU, Multan.

Research Field: Design and synthesis of anti-diabetic & anticancer compounds, Green synthesis of Photo catalyst, Electro catalyst, CNTs/NPs composites and CNTs covalent linkage with small molecules.

Personal Profile:

Passport No: FT6897154

Nationality: Pakistani

Nation ID Card No. 32304-4252715-5

Gender: Male

Religion: Islam

Education:

PhD. Applied Chemistry from Beijing Institute of Technology, Beijing, China 2014

M.Phil. Chemistry, from H.E.J. ICCBS, Pakistan. 2010

M.Sc. Chemistry, from B.Z.U. Multan, Pakistan, 2004

◆ Title of Ph.D. Thesis:

Synthesis and activity of quinoxalinone-based acid and nitro derivatives as aldose reductase Inhibitors.

◆ Title of M.Phil Thesis:

Phytochemical investigation on the constituents of *Atriplex Dimorphostegia*.

◆ Teaching Experience:

1. Assistant Professor Chemistry (IPFP) at BZU, Multan from September 2014 to September 2015
2. Assistant Professor Chemistry (visiting) at BZU, Multan from September 2015 to June 2017
3. Assistant Professor Chemistry at KFUEIT, RYK, from 3rd July 2017 to 10th March 2021
4. Head of Department Bio-Sciences & Technology from 1 June 2020 to 23 October 2020 at KFUIET, RYK, Pakistan
5. Assistant Professor Chemistry at ICS, BZU, Multan from 11th March 2021 to date.

◆ Ex-Additional duties:

1. KFUEIT green society advisor
2. KFUEIT Industrial trip coordinator
3. KFUEIT Research review report coordinator

Best achievements:

◆ **Best Student and best Researcher award:**

1. Best international student award in 2012 from Beijing Institute of Technology, Beijing China
2. Best International research student award in 2013 from Beijing Institute of Technology.

◆ **Research Supervisor:**

1. Supervised of 7 M.Phil Students at ICS, BZU, Multan
2. Supervised of 9 M.Phil student at KFUEIT, Rahim Yar Khan.
3. Supervisor of 2 Ph.D. student at ICS, BZU, Multan

◆ **Fellowships Awarded:**

1. Awarded M.Phil H.E.J. fellowship from 2007-2010
2. Awarded Ph.D. Chinese Scholarship council(CSC) from September 2010-2014
3. Recommended for TYSP postdoc form Ministry of Science and Technology, Islamabad

◆ **Research Grants:**

1. PhD Research Project: Awarded Ph.D. Research Fund for the Doctoral Program of Higher Education of China (Grant no. 20111101110042)
2. SRGP Project: Awarded the research grant of **0.5 Million** Rupees from Higher Education of Pakistan (Grant no. 21-265/SRGP/R&D/HEC/2014) during Interim placement at BZU, Multan
3. NRPU Project: grant of 6.4 Million Rupees “The design and synthesis of quinoxalinone based thiosemicarbazide derivatives for anticancer and docking study” No. 20-16961/NRPU/R&D/HEC/2021 (3 years).
4. ORIC Project: Release of Research grant (2022-2023) “Catalytic Hydrodesulphurization of Diesel Oil and its efficiency”. D-No. ORIC/2023/152

◆ **Certificate of Appreciation**

Excellent performance and dedication towards HOD duties for the session of (2019-2020)

◆ **External Examiner**

1. Evaluation of MS Thesis at Department of Chemistry, University of Lahore. No. UE/CE/2019/62
2. Evaluation of MS Thesis at Department of Chemistry University of Lahore. No. UE/CE/2019/96
3. Evaluation of MS Thesis at Department of Chemistry, IUB Bahawalpur. No. 1042/ M.Phil. / 20

◆ **Memberships:**

1. Life member of Chemical Society of Pakistan
2. Associate Editor JOCR (Journal of ongoing chemical reserach)

◆ **Potential Reviewer:**

1. Journal of Chemical Separation
2. Chinese Journal of Chemistry

3. Natural Products Communications (manuscript WF028)
4. ACS Applied Energy Materials

◆ **HEC Projects Reviewer**

1. Reviewed as expert the Project Number: 14974
2. Reviewed as expert the Project Number: 16276
3. Full Project Proposal Stage review of **Project Number** " 15525 " titled Pharmaceutical Co-crystallization for improved physicochemical features: Synthesis, Characterization and Biological Studies of their potential as Future Drugs. under **NRPU** for YEAR 2021.

◆ **Conferences and workshops:**

1. Attended the lecture series on modern Mass Spectrometry, H.E.J. Research Institute of Chemistry, 07-29-2007.
2. Attended Courses of X-Rays crystallography, H.E.J. Research Institute of Chemistry, 06-08-2006.
3. Attended the Frontier of Green Technology training Workshop Institute of Process Engineering (IPE) Chinese academy of Science (CAS), 24-29-9-2013.
4. Participation in the 6Th International and 16Th national chemistry conference held in August 2006, Department of Chemistry, BZU, Pakistan
5. Abstract accepted and Participation in the, 14Th International Chemistry conference held in October 2015, Department of Chemistry, IUB, Pakistan
6. Participation of testing and evaluation workshop from 15-17/8/2018 held by HEC Pakistan at KFUEIT Rahim Yar Khan.
7. Participation in the International Chemistry Conference, Celebrating the Periodic Table Year 2019, held in 27-29/3/2019, ICS, BZU, Pakistan
8. Participation in the 2nd International Conference on NANOSCIENCE & NANOTECHNOLOGY (ICCON), held in 1-2 November, 2019 at LUMS Lahore, Pakistan
9. Certificate for Participation for attending The COMSTECH webinar on "Opportunities for production of Affordable Biosimilar medicines, and Plant-based Novel Therapeutics" in Islamic World by Prof. Dr. Ahmed Abdullah Azad on 12Th November 2020.
10. Selected participants for the Global Al-Farabi Forum, The OIC Standing Committee on Scientific and Technological Cooperation (COMSTECH) and Government of Kazakhstan are organizing a Symposium on the great Muslim Philosopher Abu Nasr Al-Farabi (c. 870-c. 950 CE) on the occasion of his 1150th birth Anniversary on 21-22 December 2020 at COMSTECH Secretariat, Islamabad.
11. British Council-Higher Education Commission , Capacity Building Course for Principal Investigators Multan, Pakistan on 16th -20th May 2022.
12. Virtual Drug Discovery Symposium held at LUMS via Zoom on September 16, 2022

◆ **Poster presentation:**

1. Presented the poster at Green chemistry workshop in CAS, (IPE) and Chinese academy of Science. 2014.
2. Poster Presentation in the 2nd International Conference on NANOSCIENCE & NANOTECHNOLOGY(ICCON), held in 1-2 November, 2019 at LUMS Lahore, Pakistan

◆ **GRE (ETS and Local).**

1. Passed the International subjective GRE in 2007.
2. Passed the Local NTS Test in 2007

◆ **Research Expertise:**

1. Isolation of natural products and their phytochemical investigation
2. Design and novel synthesis of biological active compounds
3. Synthesis of small molecules and their SAR study by molecular docking modulation
4. In vitro activity test of small molecules as aldose reductase inhibitors
5. Functionalization and modification of carbon nanotubes as electro catalyst and their anti-bacterial study

◆ **Professional softwares skill:**

1. Use of Molegro Virtual Docker software, version 5.0
2. Use of Scifinder to search web knowledge about the publications and patent,
3. Using Endnote program to search and set the references
4. Use of Bio Chemdraw software

◆ **Instrumental and characterization skill:**

1. Purification of novel compounds using column chromatography and HPLC
2. Use of UV-Visible spectrophotometer, Mechanical shaker and Rotary evaporator
3. Characterization of Organic compounds by NMR, HRMS and HMBC, FTIR and
4. XRD, SEM, RAMAN, EDX. TGA

◆ **Languages:**

Urdu: Native language

English: Official language

Chinese: Intermediate listener, novice speaker, advanced reading and typing

◆ **Research Publications:**

1. **Saghir Hussain**, ShaguftaParveen, Xiangyu Qin, XinHao, Shuzhen Zhang, Xin Chen, Changjin Zhu, Bing Ma, Novel synthesis of Nitro-Quinoxalinone derivatives as Aldose reductase inhibitor. *Bioorganic and Medicinal Chemistry letters*, 24, 2086-2089 (2014); Impact Factor= 2.331.
2. **Saghir Hussain**, ShaguftaParveen, XinHao, Shuzhen Zhang, Wei Wang, Xiangyu Qin, Yanchun Yang, Xin Chen, Changjin Zhu, Bing Ma, Structure-Activity Relationships of Quinoxalinone Derivatives as Aldose Reductase Inhibitors. *European Journal of Medicinal Chemistry*, 80, 383-392 (2014); Impact Factor= 3.432.
3. ShaguftaParveen, **Saghir Hussain**, Shaojuan Zhu, Xiangyu Qin, XinHao, Shuzhen Zhang, Jianglu Lu, and Changjin Zhu*, Selective synthesis and comparative activity of olefinic

- isomers of 1,2-benzothiazine-1,1-dioxide carboxylates as aldose reductase inhibitors. **RSC Advances**, 4, 21134-21140 (2014) ;Impact Factor= 3.708.
4. ShaguftaParveen, **Saghir Hussain**, Xiangyu Qin, XinHao, Shaojuan Zhu, Miao Rui, Shuzhen Zhang, Fengyan Fu, Bing Ma, and Changjin Zhu (s), Copper catalysed asymmetric synthesis and comparative ALR2 inhibition activity of (+)/(-)-1,2-benzothiazine-1,1-dioxide acetic acid derivatives. **Journal of Organic Chemistry**, 79, 4963-4972 (2014) ;Impact Factor = 4.638.
 5. Xin Chen, **Saghir Hussain**, ShaguftaParveen , et al. Sulfonyl group-containing compounds in the design of potential drugs for the treatment of diabetes and its complications. **Current Medicinal Chemistry**, 19, 3578-3604 (2012) ;Impact Factor= 3.715.
 6. Shuzhen Zhang, Xin Chen, ShaguftaParveen, **Saghir Hussain**, Yanchun Yang, Chaojun Jing, and Changjin Zhu*, Effect of C7 Modifications on Benzothiadiazine-1,1-dioxide derivatives on their Inhibitory Activity and Selectivity toward Aldose Reductase . **ChemMedChem**, 8, 603–613 (2013); Impact Factor= 3.046.
 7. Aman Karim, Itrat Fatima, **Saghir Hussain** and Abdul Malik, Dimorphoamides A-C, New phenoloi amides from *Atriplex Dimorphostegia*. **Helvetica Chimica Acta**, 94, 528-533 (2011); Impact Factor= 1.383.
 8. **Saghir Hussain**, Deli Y, ShaguftaParveen, XinHao , Chngjin Zhu , Bis[5-methoxy-2-(methoxycarbonyl)-phenyl] methylphosphonate . *Acta Cryst.* E70, 0269 (2014); Impact Factor= 0.35.
 9. He, M.L., Xu, H.L., Dong, Y., Xiao, J.H., Liu, P., Fu, F.Y., **Hussain, S.**, Zhang, S.Z., Jing, C.J., Hao, X. and Zhu, C.J., 2014. Synthesis and Characterization of Perfluoroalkyl Sulfonic Acid Functionalized Polyphosphazene for Proton-Conducting Membranes. **Journal of Macromolecular Science, Part A**, 51(1), pp.55-62.
 10. Min-lan He, Hu-lin Xu, Yan Dong, Jia-hong Xiao, Peng Liu, Feng-yan Fu, **Saghir Hussain**, Shuzhen Zhang, Chao-jun Jing, Qun Yu, Chang-jin Zhu . Synthesis and characterization of sulfonated polyphosphazene-graft-polystyrene copolymers for proton exchange membranes. **Chinese Journal of Polymer Science**, 32, 151-162 (2013); Impact Factor= 1.420
 11. ShaguftaParveen, **Saghir Hussain**, Shaojuanzhu, XinHao and Changjin Zhu. 2-[(Z)-1,1-Dioxo-2-(2,4,5-trifluorobenzyl)-3,4-dihydro-2H-1,2-benzothiazin-4-ylidene]acetic acid. *Acta Cryst.* E70, o627 (2014); Impact Factor= 0.35.
 12. Xiangyu Qin, XinHao, Hui Han, Shaojuan Zhu, Yanchun Yang, Bobin Wu, **Saghir Hussain**, ShaguftaParveen, Chaojun Jing, Bing Ma, Changjin Zhu. Design and synthesis of potent and multifunctional aldose reductase inhibitors based on quinoxalinones. **Journal of medicinal chemistry**, 58, 1254-1267(2015); Impact Factor = 5.480
 13. Xin Chen ^a, Shuzhen Zhang ^a, Yanchun Yang ^a, **Saghir Hussain**^a, Minlan He ^a, Dequan Gui^a, Bing Ma ^a, Chaojun Jing ^a, Zhixin Qiao^b and Changjin Zhu, 1,2-Benzothiazine 1,1-dioxide carboxylate derivatives as novel potent inhibitors of aldose reductase . **Bioorganic & Medicinal Chemistry**, 19, 7262-7269 (2011); Impact Factor = 2.951
 14. Xin Chen ^a, Yanchun Yang ^a, Bing Ma^a Shuzhen Zhang^a Minlan He ^a, Dequan Gui^a **Saghir Hussain** ^a, Chaojun Jing ^a Changjin Zhu ^{a,*}, Qun Yu ^{b,**} and Yan Liu ^c, Design and synthesis of potent and selective Aldose reductase inhibitors based on pyridylthiadiazine

- scaffold. *European Journal of Medicinal Chemistry*, 46, 1536-1544 (2011); Impact Factor = 3.432
15. Yanchun Yang , Zhang S, Bobin Wu, Chen X, Xiangyu Qin , MinlonHe, **Saghir Hussain**, Bing Ma , Changjin Zhu , An Efficient Synthesis of Quinoxalinone Derivatives as Potent Inhibitors of Aldose Reductase. *ChemMedChem*, 7, 823-835 (2012); Impact Factor = 3.046
 16. Xin Hao, Xiangyu Qin, **Saghir Hussain**, ShaguftaParveen, Wei Zhang, Fengyan Fu, Bing Ma, and Changjin Zhu, Chiral resolution, determination of absolute configuration, and biological evaluation of (1,2-benzothiazin-4-yl)acetic acid enantiomers as aldose reductaseinhibitors.*Journal of Enzyme Inhibition and Medicinal Chemistry*, DOI: 10.3109/14756366.2014.961447(2014) ; Impact Factor = 2.383
 17. Zaman, Sher; Hussain, Saghir; Butt, Faheem K; Jianguo, Xin; Zhu, Changjin' **Journal of Nanoscience and Nanotechnology**, Volume 17, **2017**, pp. 8557-8561; Impact Factor = 1.483
 18. Firdous, M., Butt, F.K., Zaman, S., Ahmad, J., Farooq, M.U.H., Safdar, M., **Hussain, S.**, Zapata, M.J., Maqsood, H. and Cao, C., **2020**. Diameter dependent optical and field emission properties of vanadium pentoxide nanobelts. *Ceramics International*, 46(10), pp.16135-16141.
 19. **Saghir Hussain**, Tariq Mahmood Ansari, Hina Sahar, Shamsa Kanwal, Farrukh Mansoor, Timur Darak, M. Zubair Iqbal, Fahim Khurshid Butt, Ajaz Hussain, Aun Muhammad, Sher Zaman, Ghulam Hasnain Tariq, Hafiz Muhammad Asif, Functionalisation of MWCNTs with piperazine and dopamine derivatives and their potential antibacterial activity. *Micro & Nano Letters*, pp. 1–5. **2021** doi: **10.1049/mnl.2020.0114**
 20. Farkhanda Yasmin*, Majeeda Rasheed , Maryam Arif , Waqas Farooq , **Saghir Hussain** , Saima Suleman , Jallat Khan , Habib Ali, Association of Alu-repeat Polymorphism and Myocardial Infarction in Pakistani Population, **Biomedical Letters 2021; 7(1):26-31**
 21. Tang, Z., Lu, Y., Hou, Y., Mushtaq, A., Farheen, J., Ali, I., **Hussain, S.**, Zubair Iqbal, M. and Kong, X., **2021**. Synthesis of Biocompatible Fe₃O₄-TiO₂ Janus Nanocomposites for T2 Magnetic Resonance Imaging and Photodynamic Therapy of Cancer In Vitro. *Materials Innovations* 1 (2): 2-11.
 22. Waqas, M., Younis, J., Awais, M., Nazar, N., **Hussain, S.**, Murtaza, S., Yasmin, N., Ashiq, M.N., Mirza, M. and Safdar, M., **2022**. CrS₂-Modulated Enhanced Catalytic Properties of CdS/MoS₂ Heterostructures Toward Photodegradation and Electrochemical OER Kinetics. *Energy & Fuels*, 36(15), pp.8391-8401.
 23. Asif, H.M., Khan, M.A., Zhou, Y., Zhang, L., Iqbal, A., **Hussain, S.**, Khalid, M., Rani, S. and Sun, R., **2022**. Synthesis, Characterization and Remarkable Nonlinear Absorption of a Pyridyl Containing Symmetrical Porphyrin-Polyoxometalate Hybrid. *Journal of Cluster Science*, pp.1-10.
 24. **Hussain, S.**, Khakwani, N., Faiz, Y., Zulfiqar, S., Shafiq, Z., Faiz, F., Elhakem, A., Sami, R., Aljuraide, N.I., Farid, T. and Aljabri, M.D., **2022**. Green Production and Interaction of Carboxylated CNTs/Biogenic ZnO Composite for Antibacterial Activity. *Bioengineering*, 9(9), p.437.

25. Naseem, Saira, Zahid Shafiq, Parham Taslimi, **Saghir Hussain**, Tugba Taskin-Tok, Dursun Kisa, Aamer Saeed et al. "Synthesis and evaluation of novel xanthene-based thiazoles as potential antidiabetic agents." *Archiv der Pharmazie* **(2023)**: e2200356.
26. Wu, Jianghua, Yasir Faiz, **Saghir Hussain**, Faisal Faiz, Nighat Zarshad, Anis Ur Rahman, Muhammad Amir Masood, Yu Deng, Xiaoqing Pan, and Mashkoor Ahmad. "Defects rich-Cu-doped MnO₂nanowires as an efficient and durable electrode for high performance aqueous supercapacitors." *Electrochimica Acta* **(2023)**: 141927.
27. Arain, Munazza, Ayman Nafady, Muhammad Anwar Ul Haq, Hafiz Muhammad Asif, Hafiz Badaruddin Ahmad, Muhammad Ali Khan, and **Saghir Hussain**. "Selective and sensitive colorimetric detection of endocrine disrupter fungicide carbendazim through secnidazole capped silver nanoparticles." *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* **304 (2024)**: 123313.
28. Saeed, Kinza, Muhammad Rafiq, Muhammad Khalid, Ajaz Hussain, Farhan Siddique, Muhammad Hanif, **Saghir Hussain** et al. "Synthesis, characterization, computational assay and anti-inflammatory activity of thiosemicarbazone derivatives: Highly potent and efficacious for COX inhibitors." *International Immunopharmacology* **126 (2024)**: 111259.

Reference:

1. Dr. Changjin Zhu

Department of Applied Chemistry, Beijing institute of Technology, No.5, Zhongguancun South Street, 100081, Beijing, China Tel./fex: +86 10 6891 8506
 Cell: 0086-18310262980
 E-mail:zcj@bit.edu.cn

2. Dr. Giovanni Caprioli

School of Pharmacy, University of Camerino, Viasant' agostino 1, 62032, Camerino, Italy
 Cell: 003933345407172
 E-MAIL:giovanni.caprioli@unicam.it