

Dr. Amina Sadiq

Associate Professor

Department of Chemistry

Additional Director Academics

GC Women University, Sialkot

0332-0469327

amina.sadiq@gcwus.edu.pk

Work Experience:

- **Current Position: Associate Professor** of Organic Chemistry at Department of Chemistry, GC Women University, Sialkot from May 2023 to date
- Assistant Professor of Organic Chemistry at Department of Chemistry, GC Women University, Sialkot from May 2015 to May 2023.
- Postdoctoral fellowship at Department of Chemistry, Bielefeld University, Germany from Oct 2015-Dec 2015.
- Assistant Professor (IPFP) at Department of Chemistry, University of Gujrat from Oct 2014 to May 2015.
- Researcher at Department of Chemistry, University of Gujrat from Aug 2014 to Sep 2014.
- Lecturer at Department of Chemistry, University of Gujrat from Nov 2007 to Nov 2008.
- Lecturer at Department of Chemistry, University of Sargodha from April 2007 to Oct 2007.

Education:

- **Doctorate (Dr. rer. nat.)** at Department of Chemistry, Bielefeld University, Germany from April 2009 to July 2013.

Thesis: D- α -Aminoadipic Acid as Precursor for Novel Amino Acid Building Blocks.

Thesis Grade: Magna cum Laude (Very Good)

- **M.Phil in Chemistry** at Department of Chemistry, Quaid-i-Azam University Islamabad, Pakistan from Aug 2003 to Sep 2005.

Thesis: *Isolation and synthesis of Flavonols and Comparison of their Anti-Oxidant Activity.*

Thesis Grade: A, Overall Grade: B, GPA: 3.5

- **M.Sc in Chemistry** at Department of Chemistry, University of Punjab, Lahore, Pakistan from Aug 2000 to Sep 2009.

Advance Practicals: *Synthesis of Heterocycles and Glycosides.*

Overall Grade: A, First division, 72% marks

- **B.Sc in Zoology, Botany and Chemistry** from University of Punjab, Lahore, Pakistan from Aug 1998 to Aug 2000.
First division, 62% marks
- **B.Ed in Biology and Chemistry** from Allama Iqbal Open University, Islamabad from Aug 2000 to Aug 2002.
First division, 64% marks
- **HSSC in Pre-medical Sciences** from Board of Intermediate and Secondary Education, Sargodha, Pakistan from 1996-1998.
First division, 71 % marks
- **SSC** from Board of Intermediate and Secondary Education, Sargodha, Pakistan from 1994-1996.
First division, 81 % marks

Honors and Awards

- **German Academic Exchange Service (DAAD) 2010-2013**
For carrying out doctoral research work in Germany
- **Unemployment Scholarship by HEC, Pakistan 2003-2005**
For studies of Master of Philosophy in Chemistry
- **Benevolent Fund Scholarship, Government of Pakistan**
For studies till M-Phil level

Courses Taught

- Synthetic Applications of Named Reactions
- Organic Chemistry I
- Organic Chemistry II
- Organic Chemistry III
- Protecting Groups
- Organometallic and Hetrocyclic Compounds

Conference/ Workshops :

- Participated in **“1st international conference on applied sciences & technology (ICAST-2024)”** Held via Zoom on Oct 24-25th, 2024 by Baba Guru Nanak University (BGNU), Nankana Sahib, Pakistan
- Participated in **“Innovate & improve: product refinement through team dialogue”** Held via Zoom on June 20th-21st, 2024 by Sohail University, Pakistan.
- Participated in **“Navigating IP LANDSCAPE: A comprehensive overview of Intellectual Property Rights”** Held via Zoom on May 15th, 2024 by Sohail University, Pakistan.
- Participated in **“1st Online Hands-on-training on Rietveld Refining of X-Ray Diffraction”** Held via Zoom on January 1st - 7th, 2024 by Centre for Advanced Computational Studies, New Delhi, India.
- Participated in **'From research to Publication: An overview on IEEE Publication Process'** Held via Zoom on April 5th, 2023 by Higher Education Commission of Pakistan.
- Participated in **Uranus: exploring the ice-cold chemistry of the 'frozen frontier'** Held via Zoom on April 4th, 2023 by Chemistry World Webinars.
- Participated in **'Robots in the lab - learn how automation can streamline your workflow'** Held via Zoom on April 4th, 2023 by Chemistry World Webinars.
- Organized and conducted the **'Quiz competition 2023 via Jabir Bin Hayan Chemist Society'** on February 23rd, 2023.
- Participated in **Is this the future of bioplastics upcycling?** Held via Zoom on December 1st, 2022 by Chemistry World.
- Participated in **Navigating the pathways of publishing in High-quality journals by using Scopus** Held via Zoom on November 15th, 2022 by Higher Education Commission of Pakistan.
- Organized and Participated in **DFT & MOE Computational Webinar** Held via zoom by Department of Chemistry, University of Gujrat on August 17th, 2022.
- Participated in **Learning the modern skills in E-commerce and how to earn from online platform like amazon** Held at Department of Chemistry, University of Gujrat on July 27th, 2022.
- Participated in **Anti-tobacco Awareness Seminar** Held at Department of Chemistry, University of Gujrat on June 14th, 2022.

- Participated in **Patent, drafting & filing** Held at Department of Chemistry, University of Gujrat on June 9th, 2022.
- Participated in **Driving the development of bio-based polymers with molecular simulation** Held via Zoom on April 13th, 2022 by Chemistry World.
- Participated in **Powerful technology through tiny particles: Innovation with aqueous colloidal silica** Held via Zoom on February 22nd, 2022 by Chemistry World.
- Participated in Two-day workshop on “**Promoting Research Excellence in Academics across Pakistan**” Held via Zoom by HEC on February 1st-2nd, 2022 by Chemistry World.
- Participated in **Using flow chemistry to give early drug discovery processes a boost** Held via Zoom on January 26th, 2022 by Chemistry World.
- Participated in **ChemSci2021: Leaders in the Field Symposium** Virtual Webinar Held via Zoom on December 15th, 2021 by Royal Society of Chemistry.
- Participated in **Taking chemistry to market** Virtual Webinar Held via Zoom on November 23rd, 2021 by Chemistry World Common Wealth Chemistry.
- Participated in **Optimising battery performance through materials Characterization** Virtual Webinar Held via Zoom on November 10th, 2021 by Chemistry World Oxford Instrument.
- Participated in **Virtual Drug Discovery Symposium 2021** Virtual Webinar Held via Zoom on November 1st, 2021 by LUMS.
- Participated in **Sublime precursors: how modelling organometallics at surfaces drives innovation in materials processing** Virtual Webinar Held via Zoom on October 28th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **RSC-IIT Desktop Seminar with JM C-A** Virtual Webinar Held via Zoom on October 28th, 2021 by Royal Society of Chemistry.
- Participated in **How polluting is plastic?** Virtual Webinar Held via Zoom on October 25th, 2021 by Chemistry World Royal Society of Chemistry.
- Participated in **2nd International Conference on Advances in Materials Science** Virtual Webinar Held via Zoom on October 5th and 6th, 2021 by Department of Physics, University of Education, Lahore, Pakistan.
- Participated in **Harness the power of electricity to make organic compounds** Virtual Webinar Held via Zoom on September 30th, 2021 by Chemistry World Millipore Sigma.

- Participated in **RSC-IISER Desktop Seminar with CrystEngComm** Virtual Webinar Held via Zoom on September 23th, 2021 by Royal Society of Chemistry.
- Participated in **Discover the possibilities with the new multi-sample Discovery X3 Differential Scanning Calorimeter** Virtual Webinar Held via Zoom on September 2nd, 2021 by Chemistry World Waters.
- Participated in **Moving beyond spreadsheets: rational design of materials using advanced informatics and machine learning** Virtual Webinar Held via Zoom on August 17th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **RSC-IISER Desktop Seminar with ChemComm** Virtual Webinar Held via Zoom on August 5th, 2021 by Royal Society of Chemistry.
- Participated in **Trends in modern hit discovery: How your ultra-large screens can benefit from machine learning** Virtual Webinar Held via Zoom on July 29th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **Quantitative structural analysis using STEM HAADF-iDPC** Virtual Webinar Held via Zoom on July 12th, 2021 by Chemistry World ThermoFisher Scientific.
- Participated in **A chemist's view on R&D digitalisation in materials innovation** Virtual Webinar Held via Zoom on June 24th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **Li-ion battery electrolyte degradation characterization by mass spectrometry** Virtual Webinar Held via Zoom on June 9th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **Molecular modeling for the medicinal chemistry Toolkit** Virtual Webinar Held via Zoom on May 27th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **Anxiety Management During Pandemic** Webinar Held via Zoom on May 2nd, 2021 by MentorMitr.
- Participated in **Computational acceleration of novel organic electronic materials development** Virtual Webinar Held via Zoom on April 29th, 2021 by Chemistry World Schrodinger Materials.
- Participated in **Self-Health During Pandemic (Physical, Mental and Emotional)** Webinar Held via Zoom on April 25th, 2021 by MentorMitr.
- Participated in **Soft Skills Development and Grooming** Webinar Held via Zoom on April 18th, 2021 by MentorMitr.

- Participated in **“Happiness Decoded-A way to life and Success every moment”** organized Virtual Webinar Held via Zoom on April 11th, 2021 by MentorMitr.
- Participated in **“Online Training Session on HEC Undergraduate and PhD Program Policy 2021”** organized Virtual Webinar Held via Zoom on April 8th, 2021 by QEC University of Gujrat.
- Participated in **“Breaking the Barriers: Transformational vocabulary for self development”** organized Virtual Webinar Held via Zoom on April 4th, 2021 by MentorMitr.
- Participated in **Crack the Interview Code- Learn the Skills** Webinar Held via Zoom on March 27th, 2021 by MentorMitr.
- Participated in **“Rising star in magnetic particle imaging moment”** organized Virtual Webinar Held via Zoom on March 23rd to 24th, 2021 by Magnetic insight.
- Participated in **Why are Mentors Important: Seeking the right Mentorship** Webinar Held via Zoom on March 21st, 2021 by MentorMitr.
- Participated in **Advanced enzymes to facilitate SARS-CoV-2 research** Held via Zoom on March 17th, 2021 organized by Labroots.
- Participated in **Leadership Journey-From Dependence and Independence to Interdependence** Webinar Held via Zoom on March 14th, 2021 by MentorMitr.
- Participated in **International Conference on Research Advancements in Chemistry 2021** organized by Virtual International Webinar Held via Zoom on March 10-11th, 2021 by Department of Chemistry, NUST Islamabad.
- **International Online Workshop on Consequences of Covid 19 on SMEs: Strategies for Survival”** which was organized by Tishk International University Sulaimani in partnership with University of Sulaimanion March 4th, 2021.
- Participated in **1st International Industrial Conference 2021** organized by Virtual International Webinar Held via Zoom on February 26-28th, 2021 by Department of Chemistry, NED University of Engineering & Technology
- Participated in **National Competitiveness Webinar Series 2021: Technology That Improves Productivity** Held via Zoom on February 26th, 2021 by MPC Webinar.
- Participated in **Biocompatible Nanomaterials: Applications, Trends and Technicalities** organized by Virtual International Webinar Held via Zoom on February 25th, 2021 by Department of Chemistry, University of Gujrat.

- Participated in **Improving Research Planning skills using Elsevier Tools-ScienceDirect & Scopus@ KFUEIT** organized by Research Academy Held via Zoom on 15th February, 2021 by Khawaja Fareed University of Engineering and Information Technology.
- Participated in Five days' workshop on **Flexible and wearable antennas & applications** Held via Zoom on 9-13th February, 2021 by Rajasthan Technical University Kota, Jaipur.
- Participated in **COVID-19: Biochemical Perspectives and Preventive Measures** organized Virtual International Webinar Held via Zoom on January 27-28th, 2021 by Department of Chemistry, University of Gujrat.
- Participated in **How to write Resume, Curriculum Vitae and Bio-Data** organized by Research Circle Held via Zoom on December 20th, 2020.
- Participated in **Virtual Drug Discovery Symposium 2020** organized Virtual International Webinar Held via Zoom on August 8th, 2020 by Department of Chemistry, LUMS Lahore.
- One day virtual symposium "**Natural Product Research: Trends and Technicalities**" held on October 29, 2020 at Chemistry Department, University of Gujrat, Gujrat.
- One day virtual symposium "**Antiviral Drug Design and Discovery 2020**" held on October 10, 2020 at Syed Babar Ali School of Science & Engineering Lahore University of Management Sciences, Lahore, Pakistan.
- One day **Workshop & hands on training of Mendeley** "**References made easy using Mendeley**" held on September 28, 2020 via Zoom at Forman Christian College by Office of Research, Innovation and Commercialization (ORIC).
- One day "**Virtual Organic and Medicinal Chemistry Symposium 2020**" held on September 12, 2020 at Syed Babar Ali School of Science & Engineering Lahore University of Management Sciences, Lahore, Pakistan.
- One day "**Virtual Drug Discovery Symposium 2020**" held on August 8, 2020 at Syed Babar Ali School of Science & Engineering Lahore University of Management Sciences, Lahore, Pakistan.
- Three days International Conference on "**Chemical Sciences**" conducted from 24-26 April, 2019 at the Department of Chemistry, Quaid-e-Azam University, Islamabad.
- Two days International Symposium on "**Technologies and Materials for Renewable Energy, Environment and Sustainability**" conducted from 6-7 February, 2019 at the Department of Chemistry, University of Agriculture, Faisalabad.

- Three days Conference on **“Nanomaterials: New Trends in Development and Applications”** conducted from 29-31 January, 2019 at the Chemistry of Department, Forman Christian College, Lahore.
- Two days Interdisciplinary National Workshop on **“Risk Assessment and Emergency Response to Chemical, Biological and Environmental Hazards at Work Place”** conducted from 28-29 March, 2018 at Chemistry Department, University of Gujrat, Gujrat.
- Two-day Workshop on **“Patent Drafting and Filing”** conducted from 22-23 November, 2017 at University of Gujrat, Gujrat.
- Two-day International Symposium on **“Developments in Contemporary Chemistry”** conducted from 21-22 November, 2017 at University of Gujrat, Gujrat.
- Two-day workshop **“Chromatography and Mass Spectrometry”** held on March 29–30, 2017 at University of Gujrat, Pakistan.
- Certificate of Outstanding contribution in Reviewing **“Bioorganic & Medicinal Chemistry”**, December 2016.
- Three days short course on **“Latest Trends in Green Chemistry”** held on August 09–11, 2016 at Pakistan Institute of Engineering and Applied Sciences, Islamabad, Pakistan.
- One day symposium on **“Chemistry: A Need of the Hour”** held on June 4, 2015 at University of Gujrat, Pakistan.
- Two days workshop **“Dye-Sensitized Solar Cells”** held on March 11–12, 2015 at University of Gujrat, Pakistan.
- Three days conference **“On Organic Chemistry (ORCHEM 2012)”** held on September 24–26 at Weimar, Germany.
- Three days symposium **“On Chirality”** held on July 11-13, 2012 at University of Bielefeld, Germany.
- Three days’ workshop **“Basic Research Techniques in Science and Technology”** held on March 4–6, 2008 at University of Gujrat, Pakistan.
- Two days’ workshop **“Evaluation and Assessment in Semester System”** held on November 10-11-2007 at University of Gujrat, Pakistan.

Projects:

- **As PI SRGP-HEC prject (2015)** entitled “Synthesis of new flavonoid glycosides” approved (Amounting Rs. 0.5 Million).

- **As Co-PI SRGP-HEC project (2017)** entitled “Polymer brush grafting for improved bio-compatibility of biomedical implants” approved (Amounting Rs. 0.43 Million).
- **As PI, HEC NRP Project No. 15800 (2022-2025)** entitled “Exploring Chalcone-Based Heterocycles as Potential Tyrosinase Inhibitors: Design, Synthesis and Effect of Various Substituents on their *In Vitro* and *In Silico* Studies” (Rs. 4305000/-) (Completed)

Publications:

- 1) **6-Alkynyl- and 6-Aryl-Substituted (R)-pipecolic acid derivatives.** Sadiq, A.; Sewald, N., *Org. Lett.* **2013**, *15*, 2720–2722.
- 2) **ChemInform Abstract: 6-Alkynyl- and 6-Aryl-Substituted (R)-Pipecolic Acid Derivatives.** Sadiq, A.; Sewald, N., *ChemInform*, 2013, *44*(40), [doi: 10.1002/chin.201340155]
- 3) **(R)- α -Aminoadipic acid: a versatile precursor for the synthesis of D-amino acids.** Sadiq, A.; Sewald, N., *J. Amino Acids*, **2013**, [doi:10.1155/2013/252813].
- 4) **D- α -Aminoadipic acid: An interesting chiral pool building block.** Sadiq A, Sewald N. *Arkivoc*, **2012**, 28–36.
- 5) **SAR Studies of Some Potent Antifungal Flavones, 4-Thioflavones and 4-Iminoflavones,** E. U. Mughal, A. Sadiq and A. Hasan, *Asian J. Chem.* **2012**, *24*, 4361–4364.
- 6) **Isolation and Synthesis of Flavonols and Comparison of their Antioxidant Activity** A. Hasan, A. Sadiq, A. Abbas, E. Mughal, K. M. Khan and M. Ali, *Nat. Prod. Res.* **2010**, *24*, 995–1003.
- 7) **Synthesis and Potent Anti-Bacterial Activity Of New Substituted Flavones, 4-Thioflavones and 4-Iminoflavones,** E. U. Mughal, M. Ayaz, Z. Hussain, A. Hasan, A. Sadiq, M. Riaz, A. Malik, S. Hussain and M. I. Choudhary, *Bioorg. Med. Chem.* **2006**, *14*, 4704–4711.
- 8) **Synthesis, structure–activity relationship and molecular docking of 3-oxoaurones and 3-thioaurones as acetylcholinesterase and butyrylcholinesterase inhibitors,** E. U. Mughal, A. Sadiq, S. Murtaza, H. Rafique, Zafar, T. Riaz, B. A. Khan, A. Hameed and K. M. Khan, *Bioorg. Med. Chem.*, **2017**, *25*, 100-106. (DOI: 10.1016/j.bmc.2016.10.016).

- 9) **Synthesis, Biological Activity and Computational Studies of Novel Azo Compounds**, J. Ashraf, S. Murtaza, E. U. Mughal and A. Sadiq, *J. Chem. Soc. Pak.*, **2016**, 39, 65-71.
- 10) **Synthesis, Molecular Docking Studies and Biological Evaluation of 3-Iminoaurones as Acetylcholinesterase and Butyrylcholinesterase Inhibitors**, E. U. Mughal, A. Sadiq, B. A. Khan, M. N. Zafar and I. Ahmed, *Lett. Drug Design and Discovery*, **2017**, 14, 1035-1041.
- 11) **Design, synthesis and antibacterial activities of new azo-compounds: an experimental and a computational approach**, J. Ashraf, E. U. Mughal, S. Murtaza, A. Sadiq, S. A. K. Tanoli, A. Mumtaz, A. Hameed, K. M. Khan, I. Ahmed and B. Khalid, *Lett. Drug Design and Discovery*, **2017**, 14, 1145-1154.
- 12) **Synthesis, structure-activity relationship and molecular docking studies of 3-O-flavonol glycosides as cholinesterase inhibitors**, Ehsan Ullah Mughal, Asif Javid, Amina Sadiq, Shahzad Murtaza, Muhammad Naveed Zafar, Bilal Ahmad Khan, Sajjad Hussain Sumra, Muhammad Nawaz Tahir, Kanwal, Khalid Mohammed Khan, *Bioorganic and Medicinal Chemistry*, **2018**, 26(12), 369-370.
- 13) **Design, Synthesis and Biological Evaluation of Novel Dihydropyrimidine-2-thione Derivatives as Potent Antimicrobial Agents: Experimental and Molecular Docking Approach**, Ehsan Ullah Mughal*, Amina Sadiq, Muhammad Hamayun, Muhammad Naveed Zafar, Nighat Fatima, Muhammad Arfat Yameen, Syed Aun Muhammad, Amara Mumtaz, Ishtiaq Ahmed and Tehseen Fatima, *Letters in Drug Design & Discovery*, **2018**, 15, 1189-1209.
- 14) **Design and Synthesis of Novel 1,3,4-oxadiazole Derivatives Bearing Azo Moiety as Biologically Significant Scaffolds**, Bilal Ahmad Khana*, Safeena Zafar, Ehsan Ullah Mughal, Muhammad Naeem Ahmed, Syeda Shamila Hamdani, Tashfeen Akhtar, Ihsan-ul-Haq, Amina Sadiq and Khalid Mohammed Khan, *Letters in Drug Design & Discovery*, **2018**, 15, 1346-1355.
- 15) **Biotechnology: A Powerful Tool for the Removal of Cadmium from Aquatic Systems**, Rabeea Munawar, Ehsan Ullah Mughal, Amina Sadiq, Hamid Mukhtar, Muhammad Naveed Zafar, Sains Malaysiana, **2018**, 47(1), 27-34.
- 16) **An Efficient Protocol for the Synthesis, Biological Screening and Molecular Docking Studies of 3,4-Dihydropyrimidine-2-one/thione Derivatives**, Ehsan Ullah Mughal, Hafiz Umar Farooq, Amina Sadiq, Hummera Rafique, Sajjad Hussain, Sumra,

Muhammad Naveed Zafar, Nighat Fatima, Syed Aun Muhammad, Abdul Manand, Chaudhary Omer Javed and Muhammad Tayyab, *Letters in Drug Design & Discovery*, **2019**, 17, 3, 330-340.

- 17) Flavonols and 4-thioflavonols as potential acetylcholinesterase and butyrylcholinesterase inhibitors: Synthesis, structure-activity relationship and molecular docking studies**, Ehsan Ullah Mughal, Amina Sadiq, Jamshaid Ashraf, Muhammad Naveed Zafar, Sajjad Hussain Sumrra, Rubina Tariq, Amara Mumtaz, Asif Javid, Bilal Ahmad Khan, Anser Ali, Chaudhary Omer Javed, *Bioorganic Chemistry*, **2019**, 9, 103124-103135.
- 18) An Efficient Protocol for the Synthesis, Biological Screening and Molecular Docking Studies of 3,4-Dihydropyrimidine-2-one/thione Derivatives**, Ehsan Ullah Mughal, Hafiz Umar Farooq, Amina Sadiq, Hummera Rafique, Sajjad Hussain, Sumrra, Muhammad Naveed Zafar, Nighat Fatima, Syed Aun Muhammad, Abdul Manand, Chaudhary Omer Javed and Muhammad Tayyab, *Letters in Drug Design & Discovery*, **2020**, 17, 3, 330-340.
- 19) Design and synthesis of new flavonols as dual α -amylase and α -glucosidase inhibitors: Structure-activity relationship, drug-likeness, *in vitro* and *in silico* studies**, J. Ashraf, E.U. Mughal, H. U. Farooq, **A. Sadiq**, N. Naeem, S. A. Muhammad, T. Quosain, M. N. Zafar, B. A., Khan, M. Anees, *Journal of Molecular Structure*, , **2020**, 12, 8458.
- 20) Exploring 3-benzyloxyflavones as cholinesterase inhibitors: Synthesis, structure-activity relationship, DFT and molecular modelling simulations**, E.U. Mughal, **A. Sadiq**, M. Ayub, N. Naeem, A. Javid, S.H. Sumrra, N. N. Zafar, B. A. Khan, F. P. Malik, I. Ahmed, *Journal of Biomolecular Structure and Dynamics*, **2020**, 10.1080/ 07391102.1803136.
- 21) Exploring 3-Hydroxyflavone scaffolds as mushroom tyrosinase inhibitors: synthesis, X-ray crystallography, antimicrobial, fluorescence behaviour, structure-activity relationship and molecular modelling studies**, J. Ashraf, E. U. Mughal, **A. Sadiq**, M. Bibi, N. Naeem, A. Ali, A. Massadaq, N. Fatima, A. Javid, M. N. Zafar, B. A. Khan, M. F. Nazar, A. Mumtaz, M. N. Tahir, and M. Mirzaei, *Journal of Biomolecular Structure and Dynamics*, **2020**, doi.org/10.1080/07391102.2020.1805364.
- 22) Terpyridine-metal complexes: Effects of different substituents on their physico-chemical properties and DFT studies**, E. U. Mughal, M. Mirzaei, **A. Sadiq**, S. Fatima,

A. Naseem, N. Naeem, N. Fatima, S. Kausar, A. A. Altaf, M. N. Zafar, B. A. Khan, *Royal Society Open Science*, **2020**, 7, 201208.

23) *In Silico* analyses of Synthetic Analogs of 3-Oxoaurones, 3-Thioaurones, 3-Hydroxyflavones, 4-Thioflavonols, 3-Benzylloxyflavones, 3-O-Flavonol glycoside and 1,2-Benzisothiazinone as inhibitors of Main Protease of SARS-COV-2, F. Batool, E. U. Mughal, **A. Sadiq**, N. Naeem, A. Javid, M. Saeed, *Journal of Biomolecular Structure and Dynamics*, **2020**, doi.org/10.1080/07391102.2020.1850359.

24) Structure-based designing and synthesis of 2-phenylchromone derivatives as potent tyrosinase inhibitors: In vitro and in silico studies, Jamshaid Ashraf, Ehsan Ullah Mughal, Reem I. Alsantali, Rami J. Obaid, Amina Sadiq, Nafeesa Naeem, Anser Ali, Anam Massadaq, Qamar Javed, Asif Javid, Sajjad Hussain Sumrra, Muhammad Naveed Zafar, Saleh A. Ahmed. *Bioorganic & Medicinal Chemistry* 35, **2021**, 116057.

25) 2-Benzylidenebenzofuran-3(2H)-ones as a new class of alkaline phosphatase inhibitors: synthesis, SAR analysis, enzyme inhibitory kinetics and computational studies, Jamshaid Ashraf, Ehsan Ullah Mughal*, Reem I Alsantali, Amina Sadiq, Rabab S Jassas, Nafeesa Naeem, Zaman Ashraf, Yasir Nazir, Muhammad Naveed Zafar, Amara Mumtaz, Masoud Mirzaei, Satar Saberi, Saleh A Ahmed, *RSC Advances*, **2021**, 11(56), 35077-35092.

26) Natural and synthetic flavonoid derivatives as new potential tyrosinase inhibitors: A systematic review, Rami J Obaid, Ehsan Ullah Mughal*, Nafeesa Naeem, Amina Sadiq, Reem I Alsantali, Rabab S Jassas, Ziad Moussa, Saleh A Ahmed, *RSC Advances*, **2021**, 11(36), 22159-22198.

27) DDQ as a versatile and easily recyclable oxidant: a systematic review, Meshari A Alsharif, Qandeel Alam Raja, Nida Abdul Majeed, Rabab S Jassas, Abdulrahman A Alsimaree, Amina Sadiq, Nafeesa Naeem, Ehsan Ullah Mughal*, Reem I Alsantali, Ziad Moussa, Saleh A Ahmed, *RSC Advances*, **2021**, 11(47), 29826-29858.

28) Scholl reaction as a powerful tool for the synthesis of nanographenes: a systematic review, Rabab S Jassas, Ehsan Ullah Mughal*, Amina Sadiq, Reem I Alsantali, Munirah M Al-Rooqi, Nafeesa Naeem, Ziad Moussa, Saleh A Ahmed, *RSC Advances*, **2021**, 11(51), 32158-32202.

- 29) Flavone-based Hydrazones as New Tyrosinase Inhibitors: Synthetic Imines with Emerging Biological Potential, SAR, Molecular Docking and Drug-likeness Studies,** Reem I Alsantali, Ehsan Ullah Mughal*, Nafeesa Naeem, Meshari A Alsharif, Amina Sadiq, Anser Ali, Rabab S Jassas, Qamar Javed, Asif Javid, Sajjad Hussain Sumrra, Abdulrahman A Alsimaree, Muhammad Naveed Zafar, Basim H Asghar, Hatem M Altass, Ziad Moussa, Saleh A Ahmed, *Journal of Molecular Structure*, **2022**, 131933.
- 30) Miscellaneous azo dyes: A comprehensive review on recent advancements in biological and industrial Applications,** Reem I Alsantali, Qandeel Alam Raja, Abdullah YA Alzahrani, Amina Sadiq, Nafeesa Naeem, Ehsan Ullah Mughal*, Munirah M Al-Rooqi, Nizar El Guesmi, Ziad Moussa, Saleh A Ahmed, *Dyes and Pigments*, **2022**, 110050.
- 31) Synthesis and Evaluation of 1, 3, 5-Triaryl-2-Pyrazoline Derivatives as Potent Dual Inhibitors of Urease and α -Glucosidase Together with Their Cytotoxic, Molecular Modeling and Drug-Likeness Studies,** Rabia Mehmood, Amina Sadiq, Reem I Alsantali, Ehsan Ullah Mughal*, Meshari A Alsharif, Nafeesa Naeem, Asif Javid, Munirah M Al-Rooqi, Gul-e-Saba Chaudhry, Saleh A Ahmed, *ACS Omega*, **2022**, 7(4), 3775–3795.
- 32) Chalcone- and Flavone-based Novel Terpyridine Metal Complexes: Synthesis, Electrochemical, Photophysical, Photovoltaic and Computational Studies,** Ehsan Ullah Mughal*, Nafeesa Naeem, Amina Sadiq, Samia Kausar, Safeer Ahmed, Saleh A. Ahmed, Rami J. Obaid, Meshari A. Alsharif, Rabab S. Jassas, Reem I. Alsantali, Ataf Ali Altaf, *Dyes and Pigments*, **2022**, 201, 110248.
- 33) Design, Synthesis, and Structural Characterization of Thioflavones and Thioflavonols as Potential Tyrosinase Inhibitors: In Vitro and In Silico Studies,** Ehsan Ullah Mughal*, Jamshaid Ashraf, Reem I. Alsantali, Amina Sadiq, Rami J. Obaid, Nafeesa Naeem, Yasir Nazir, Syed Wadood Ali Shah, Saleh A. Ahmed, *ACS Omega*, **2022**, 7(20), 17444-17461.
- 34) Pharmacological Significance of Nitrogen-Containing Five and Six-Membered Heterocyclic Scaffolds as Potent Cholinesterase Inhibitors for Drug Discovery: A Systematic Review,** Rami Obaid, Ehsan Ullah Mughal*, Nafeesa Naeem, Munirah Al-Rooqi, Amina Sadiq, Rabab Jassas, Ziad Moussa, Saleh Ahmed, *Process Biochemistry*, **2022**, 120, 250-259.

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PhD Students:

Currently 02 students are under Supervision.

MS Research Thesis Supervised:

Sr. No	Name of Student	Thesis Title	Year
1	Rabia Mehmood	Synthesis and biological evaluation of pyrazoline derivatives	2018
2	Rubina Bibi	Synthesis, Biological evaluation and SAR study of varyingly substituted 4-thioflavonols	2018
3	Afshan Ghafoor	Poly (Sulfobetaine Methacrylate) grafting through argent ATRP for surface with improved biocompatibility	2018
4	Momna Ayub	Synthesis, characterization and biological evaluation of 3-O-Benzyl flavonols.	2019
5	Aqsa	Synthesis of isoxazoline derivatives and their biological evaluation	2019
6	Areeba Saher	Synthesis of pyrazole and pyrazoline derivatives and their biological evaluation	2019
7	Kainat Mustafa	Synthesis and exploring of benzalacetophenone derivatives as mushroom tyrosinase inhibitors	2020
8	Ammara Majid	Synthesis, Spectral Characterization and Antimicrobial activity of 2,3-Dihydro-1,5-BenzoThiapepine	2020

References:

1) Prof. Dr. Norbert Sewald

University of Bielefeld

Department of Chemistry
Organic and Bioorganic Chemistry
Postfach 10 01 31 33501 Bielefeld – Germany
Email: norbert.sewald@uni-bielefeld.de

2) Prof. Dr. Harald Gröger

University of Bielefeld
Department of Chemistry
Postfach 10 01 31 33501 Bielefeld – Germany
Email: harald.groeger@uni-bielefeld.de