

CURRICULUM-VITAE

MOHSIN VAHID KHAN (Ph.D.)

Assistant Professor

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CARRIER OBJECTIVE

To pursue a career as an academician and researcher instilled with utmost efforts and sincerity where I can excel with my knowledge, experience, integrity and commitment with an objective of contributing the society.

AREA OF INTEREST

Molecular Biophysics and Biophysical Chemistry

Protein aggregation, phenomenon which is considered as main culprit of onset of several neurodegenerative diseases like Alzheimer's, Parkinson's, and Dementia with levy body, along with non-neurodegenerative ailments such as Cataract, Type II diabetes. Induction of protein aggregates and multi technique biophysical characterization of these aggregate variants for determining morphologies either as amorphous or amyloid, under both physical as well as chemical stresses. Induction and tracing of transformation of amorphous morphology into amyloid and vice-versa, and inhibition of protein undergoing aggregation pathways, interceded by different drugs, polyphenols and other additives etc.

ACADEMIC BACKGROUND

Course	Year	Institute
Ph.D.	2017	Aligarh Muslim University, Aligarh
M.Sc.	2010	Jamia Hamdard University, New Delhi
B.Sc.	2006	St. Andrews College, Gorakhpur, UP

WORK EXPERIENCES

Assistant Professor	2022-	Department of Biosciences, Integral University, Lucknow
Guest faculty	2020-22	Department of Science, ICC, Buxipur, Gorakhpur
Guest faculty	2019-20	Suyash Institute of Pharmacy, Hakkabad, Gorakhpur



RESEARCH PUBLICATIONS

- **Khan, M.V.**, Rabbani, G., Ahmad, E. and Khan, R.H. (2014) Fluoroalcohols-induced modulation and amyloid formation in conalbumin. *Int J Biol Macromol* 70, 606-14. (**Impact Factor = 8.2**).
- **Khan, M.V.**, Rabbani, G., Ishtikhar, M., Khan, S., Saini, G. and Khan, R.H. (2015) Non-fluorinated cosolvents A potent amorphous aggregate inducer of metalloproteinase-conalbumin (ovotransferrin). *Int J Biol Macromol* 78, 417-28. (**Impact Factor = 8.2**).
- **Khan, M.V.**, Ishtikhar, M., Rabbani, G., Zaman, M., Abdelhameed, A.S. and Khan, R.H. (2017) Polyols (Glycerol and Ethylene glycol) mediated amorphous aggregate inhibition and secondary structure restoration of metalloproteinase-conalbumin (ovotransferrin). *Int J Biol Macromol* 94, 290-300. (**Impact Factor = 8.2**).
- **Khan, M.V.**, Ishtikhar, M., Siddiqui, M.K., Zaman, M., Chandel, T.I., Majid, N, Siddiqui, M.K., Abdelhameed, A.S., Shahein, Y.E., and Khan, R.H (2017). “Biophysical insight reveals Tannic acid as amyloid inducer and conformation transformer from amorphous to

amyloid aggregates in Concanavalin A (ConA)". J Biomol Struct Dyn. doi: 10.1080/07391102.2017.1318718. (**Impact Factor = 5.23**).

- **Khan, M.V.**, Zaman, M., Chandel, T.I., Siddiqui, M.K., Siddiqui, M.K., Abdelhameed, A.S., and Khan, R.H (2017). Cationic surfactant mediated fibrillogenesis in bovine liver catalase: A biophysical approach. J Biomol Struct Dyn. Doi: org/10.1080/07391102.2017.1363085. (**Impact Factor = 5.23**).
- **Khan, M.V.**, Zakariya, S.M., and Khan R.H. (2018). Protein folding, misfolding and aggregation: A tale of constructive to destructive assembly. Int J Biol Macromol. doi: 10.1016/j.ijbiomac.2018.01.099. (**Impact Factor = 8.2**).
- Ahmad, A., Rabbani, G., Zamzami, M.A., Hosawi, S., Baothm, O.A., Altayeb, H., Akhtar, M.S.N., Ahmad, V., **Khan, M.V.**, Khan, M.E., Kim, S.H (2024). An affordable label-free ultrasensitive immunosensor based on gold nanoparticles deposited on glassy carbon electrode for the transferrin receptor detection. Int J Biol Macromol. 273, 2, doi: <https://doi.org/10.1016/j.ijbiomac.2024.133083>. (**Impact Factor = 8.2**).
- Rabbani, G., Khan, M.E., Ahmad, E., **Khan, M.V.**, Ahmad, A., Khan, A.U., Ali, W., Zamzami, M.A., Bashiri, A.H., Zakri, W. (2023) Serum CRP biomarker detection by using carbon nanotube field-effect transistor (CNT-FET) immunosensor. Bioelectrochemistry. <https://doi.org/10.1016/j.bioelechem.153.108493>. (**Impact Factor = 5.76**).
- Rabbani, G., Ahmad, E., **Khan, M.V.**, Ashraf, M.T., Bhat, R. and Khan, R.H. (2015) Impact of structural stability of cold adapted *Candida antarctica* lipase B (CALB): In relation to pH, chemical and thermal denaturation. RSC Adv 5, 20115-20131. (**Impact Factor = 4.03**).
- Ishtikhar, M., **Khan, M.V.**, Khan, S., Chaturvedi, S.K., Badr, G., Mahmoud, M.H. and Khan, R.H. (2016) Biophysical and molecular docking insight into interaction mechanism and thermal stability of human serum albumin isoforms with a semi-synthetic water-soluble camptothecin analog irinotecan hydrochloride. J Biomol Struct Dyn 34, 1545-60. (**Impact Factor = 5.23**).
- Zaman, M., Zakariya, S.M., Nusrat, S., **Khan, M.V.**, Qadeer, A., Ajmal, M.R. and Khan, R.H. (2016) Surfactant-mediated amyloidogenesis behavior of stem bromelain; a biophysical insight. J Biomol Struct Dyn 14, 1-13. doi: 10.1080/07391102.2016.1185040. (**Impact Factor = 5.23**). Ishtikhar, M., Rahisuddin, **Khan, M.V.** and Khan, R.H. (2016) Anti-aggregation property of thymoquinone induced by copper-nanoparticles: A biophysical approach. Int J Biol Macromol 93, 1174-1182. (**Impact Factor = 8.2**).
- Chandel, T.I., Rabbani, G., **Khan, M.V.**, Zaman, M., Alam, P., Shahein, Y.E. and Khan, R.H. (2016) Binding of anti-cardiovascular drug to serum albumin: an insight in the light of spectroscopic and computational approaches. J Biomol Struct Dyn 1-14. doi: 10.1080/07391102.2016.1266968. (**Impact Factor = 5.23**).
- Ajmal, M.R., Chandel, T.I., Alam, P., Zaidi, N., Zaman, M., Nusrat, S., **Khan, M.V.**, Siddiqui, M.K., Shahein, Y.E., Mahmoud, M.H, Badr, G. and Khan, R.H. (2017) Fibrillogenesis of human serum albumin in the presence of levodopa - spectroscopic, calorimetric and microscopic studies. Int J Biol Macromol 94,301-308. (**Impact Factor = 8.2**).
- Ajmal, M.R., Nusrat, S., Alam, P., Zaidi, N., **Khan, M.V.**, Zaman, M., Shahein, Y.E., Mahmoud, M.H., Badr, G. and Khan, R.H. (2017) Interaction of anticancer drug clofarabine with human serum albumin and human α -1 acid glycoprotein. Spectroscopic and molecular docking approach. J Pharm Biomed Anal 135, 106-115. (**Impact Factor = 3.93**).
- Zaman, M., Nusrat, S., Zakariya, S.M., **Khan, M.V.**, Ajmal, M.R. and Khan R.H. (2017). Elucidating the interaction of clofazimine with bovine liver catalase; a comprehensive

spectroscopic and molecular docking approach. *J Mol Recognit.* doi: 10.1002/jmr.2619. (**Impact Factor = 2.89**).

- Rabbani, G., Baig, M.H., Jan, A.T., Ju, Lee. E., **Khan, M.V.**, Zaman, M., Farouk, A.E., Khan. R.H., Choi. I. (2017). Binding of erucic acid with human serum albumin using a spectroscopic and molecular docking study. *Int J Biol Macromol.* doi: 10.1016/j.ijbiomac.2017.04.051. (**Impact Factor = 8.2**).
- Chandel, T.I., Zaman, M, **Khan M.V.**, Ali, M., Rabbani, G., Ishtikhar, M., Khan, R.H. (2017). A mechanistic insight into protein-ligand interaction, folding, misfolding, aggregation and inhibition of protein aggregates: An overview. *Int J Biol Macromol.* doi: org/10.1016/j.ijbiomac.2017.07.185. (**Impact Factor = 8.2**).
- Ishtikhar, M., Ahmad, E., Siddiqui, Z., Ahmad, S., **Khan, M.V.**, Zaman, M., Siddiqui, M.K., Nusrat, S., Chandel, T.I., Ajmal, M, R., and Khan, R.H. (2018). Biophysical insight into the interaction mechanism of plant derived polyphenolic compound tannic acid with homologous mammalian serum albumins. *Int J Biol Macromol* 107(Pt B):2450-2464. (**Impact Factor = 8.2**).
- Zaman, M., **Khan, M.V.**, Zakariya, S.M., Nusrat, S., Meeran, S.M., Alam, P., Ajmal, M.R., Wahiduzzaman, W., Shahein, Y.E., Abouelella, A.M., and Khan, R.H. (2018). Amino group of salicylic acid exhibits enhanced inhibitory potential against insulin amyloid fibrillation with protective aptitude toward amyloid induced cytotoxicity. *J Cell Biochem.* doi: 10.1002/jcb.26538. (**Impact Factor = 4.48**).
- Siddiqui, M.K., Alam, P., Chaturvedi, S.K., **Khan, M.V.**, Nusrat, S., Malik, S., and Khan, R.H. (2018). Capreomycin inhibits the initiation of amyloid fibrillation and suppresses amyloid induced cell toxicity. *Biochim Biophys Acta.* doi: 10.1016/j.bbapap.2018.02.005. (**Impact Factor = 4.11**).
- Ajmal, M. R., Almutairi, Fahad., Zaidi, N., Alam, P., Siddiqui, M.K., **Khan, M.V.**, Zaman, M., Ishtikhar, M., and Khan R.H. (2018). Biophysical insights into the interaction of clofazimine with human alpha 1-acid glycoprotein:A multitechnique approach. *J Biomol Struct Dyn.* doi.org/10.1080/07391102.2018.1461686. (**Impact Factor = 5.23**).
- Siddiqui, M.K, Alam, P., Malik, S., Majid, N., Chaturvedi, S.K., Rajan, S., Ajmal, M.R., **Khan, M.V.**, Uversky, V.N., Khan RH (2018). Stabilizing proteins to prevent conformational changes required for amyloid fibril formation. *J Cell Biochem.* doi: 10.1002/jcb.27576. (**Impact Factor = 4.48**).

BOOK CHAPTERS

- **Title and Authors:** “Impact of osmolytes in conformational modulation of protein and its applications in biotechnology”. Tajalli Ilm Chandel, **Mohsin Vahid Khan** and Rizwan Hasan Khan. **Title of Book:** Cellular Osmolytes: From chaperoning protein folding to clinical perspectives. **Springer Nature** Singapore Pte Ltd. **2017** L. Rajendra Kumar Singh, T.A. Dar (eds.), Cellular Osmolytes, DOI 10.1007/978-981-10-3707-8_7.

PATENTS

- Rabbani G, Ahmad E, **Khan MV**, Ahmad A, Khan RH, Kumar M. entitled “**A process for inducing conformational alterations in *Thermomyces lanuginosa* lipase**”. Publication date (U/S 11A) 12/12/2014. No. 1080/DEL/2013.

SEMINAR/CONFERENCE/SYMPOSIA /WORKSHOPS ORGANIZED

- One day International Symposium on “Artificial Intelligence in Biological Sciences: Recent Trends” held on 23rd April 2024, Organized by Department of Biosciences, Integral University, Lucknow.
- One International Seminar on “Application of microbes in synthetic biology and sciences” held on 18th September, 2023, Organized by Department of Biosciences, Integral University, Lucknow.
- One Week “A hands on training program on “Advanced molecular Biology technique” held on 1st to 7th December, 2022 Under the aegis of “Synergistic Training program Utilizing the scientific and Technological Infrastructure” (STUTI) organized by DST-FIST sponsored Department of Biosciences & Integral Information & Research Center Integral University (IIRC), Lucknow, in Collaboration with DST-STUTI, PMU, Jamia Hamdard, New Delhi.
- Two days First INDO-UZBEK MEET & International Conference on “Trends & Innovations in Food Technology From Farm to Fork”, TIFT-2022 Dated 24-25 November 2022 Organized by Department of Bioengineering Integral University (IU) and Co-Organized by Tashkent Chemical-Technological Institute, TCTI, Tashkent, Uzbekistan.

FACULTY DEVELOPMENT PROGRAM (PDP)/ PROFESSIONAL DEVELOPMENT PROGRAM (FDP)/ SHORT TERM COURSES ATTENDED

- One week “Faculty Development Program on Informative Teaching and Research Prospects in Biotechnology and Biosciences” held from 15.07. 2024 to 20.07.2024, Organized by Institute of Biosciences & Technology (IBST) and Internal Quality Assurance Cell (IQAC), Shri Ram Memorial University, Lucknow.
- Five days Short Term Course (STC) on “Research Methodology and Publication Ethics” held from 22.04.2024 to 26.04.2024, Organized by Association of Indian Universities, Integral University – Academic and Administrative Development centre (AIU – IU – AADC) Integral University, Lucknow.
- Five days Faculty Development Program (FDP) on “Effective Teaching Through Modern Technologies” held from 04.03. 2024 to 08.03.2024, Organized by Association of Indian Universities (AIU) & Integral University, Lucknow (IU) Academic and Administrative Development Centre (AIU-IU-AADC), Integral University, Lucknow.
- Two week Faculty Development Program (FDP) on “Recent Advancement in Biotechnology for Sustainable Development” held from 07.10. 2023 to 04.11.2023, Organized by Department of Bioengineering and Department of Biosciences, Integral University, Lucknow
- Ten days Faculty Development Program (FDP) on “Bridging Climate Change and Environmental Security: Pathways to Resilience” with Grade “A” held from 19th to 29th September 2023, in hybrid mode, Jointly Organized by Department of Environmental Science,

Integral University, Lucknow and The Environmental and Consumer Protection Foundation, New Delhi.

- Faculty Development Program on “Advanced Molecular Biology Techniques” From 01 December to 7 December- 2022 organised by Department of Biosciences, Integral University, Lucknow.

CONFERENCE/ WORKSHOP/ SEMINAR/ SYMPOSIUM/ WEBINAR ATTENDED

- One day Webinar on “Ethics in the Age of Open Science: Best Practices in Medical Publishing” held on 20.06.2024, Organized by IndiaBioscience and Taylor & Francis Group.
- One week (Online) Workshop on “Entrepreneurship and Skill Development” held from 10.06. 2024 to 14.06.2024, Organized by Institute of Biosciences & Technology (IBST) and Internal Quality Assurance Cell (IQAC), Shri Ram Memorial University, Lucknow
- One Day Webinar on “Digital Education for Gen-Z Learners” held on 16th May, 2024, organized by Faculty of Education, Integral University, Lucknow
- One Day Quality Improvement Program (QIP) Workshop on "Pathways to Excellence: Enhancing Accreditation, Rankings and Outcome Based Education" held on 8th May, 2024, Organized by Internal Quality Assurance Cell (IQAC), Integral University, Lucknow.
- One Day National Symposium on "Intellectual Property Rights in Industry and Academia" held on 25th April, 2024, Organized by Department of Chemistry, Integral University, Lucknow, under the aegis of National Intellectual Property Awareness Mission (NIPAM).
- Two-week International Workshop on “Quality Teaching Through Micro-Teaching Skills” held on 12th March to 23rd March, 2024, organized by Faculty of Education, Integral University, Lucknow.
- One day Webinar on “Excellence in Peer Review: How to be an effective peer reviewer”, held on 27 March 2024, organized by Peer Review Systems, Taylor & Francis Group.
- Three days Online Workshop titled “From Funding to Communicating Science: Virtual Workshop Series”, held from December 12-14, 2023, co-organised by IndiaBioscience and Taylor & Francis Group.
- Two-week International Workshop on “Higher Education Quality Enhancement: pedagogical Reforms” held from 28th August to 14th September 2023, Organized by Faculty of Education in Collaboration with Internal Quality Assurance Cell (IQAC), Integral University, Lucknow (U.P.) India.
- Two-week International Workshop on “Teaching Competency Through Micro-Teaching Skills” held from 14th to 2nd March 2023, Organized by Faculty of Education, Integral University, Lucknow (U.P.) India.
- Two days First INDO-UZBEK MEET & International Conference on “Trends & Innovations in Food Technology From Farm to Fork”, TIFT-2022 Dated 24-25 November 2022 Organized by Department of Bioengineering Integral University (IU) and Co-Organized by Tashkent Chemical-Technological Institute, TCTI, Tashkent, Uzbekistan.

- One day Workshop on “Creating awareness about consultancy projects and implementation of University consultancy policy” held on September 15, 2022, Organized by Human Resource Development Centre (HRDC), Integral University, Lucknow (U.P.) India.
- Two days Zonal Seminar and ISF Congress on “ICT for Health and Mankind” held on March 16-17, 2019, Organized by The Institution of Electronics and Telecommunication Engineers (IETE), Aligarh Centre, Aligarh Muslim University, Aligarh (U.P.) India.
- Two days Symposium cum Bioinformatics Workshop on “Current Trends in Proteomics and Bioinformatics” held on March 16-17, 2017 Sponsored by UGC and DBT, Govt. Of India, New Delhi, Organized by Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh (U.P.) India.
- Two days, First Indo-Russian meet and Second International Conference on “Biotechnological Advancement in Free radical and Medicines” held on 23-25 January 2017 and delivered Oral presentation, Organized by Department of Biosciences, Integral University, Lucknow (U.P.) India.
- Three days International conference on “Emerging Trends in Biomedical Sciences” held on 6-8 March 2016 and Presented Poster, Organized by Department of Biochemistry, Faculty of Life Sciences, Aligarh Muslim University, Aligarh (U.P.) India.
- One day “Science Communication Workshop” held on 26 March 2015 organized by The Wellcome Trust/DBT India Alliance at Aligarh Muslim University, Aligarh (U.P.) India.
- One day National Symposium on “Recent Advances in Free Radical Biology and Biochemistry” held on 6 March 2014 and Presented Poster, under UGC-SAP-DRS-III., Organized by Department of Biochemistry, Faculty of Life Sciences, Aligarh Muslim University, Aligarh (U.P.) India.
- One day Workshop on “Biomedical Engineering and Its Recent Trends (BERT 2014)” held on February 11, 2014, Under TEQIP-II, Organised by Ergonomics Research Division, Department of Mechanical Engineering, Zakir Husain College of Engineering & Technology, Aligarh Muslim University, Aligarh, (U.P.) India.
- Three days “National Symposium Cum Bioinformatics workshop on New Facet of Biotechnology from Genes to Proteins” held on January 15-17, 2014 Sponsored by UGC and DBT, Govt. Of India, New Delhi, Organized by Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh, (U.P.) India.
- Three days “National Conference on Recent Trends in Protein Structural Biology” held on December 16-18, 2013 Organized by Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, Jamia Nagar New Delhi, India.
- Two days Workshop on “Current Advances in Bioinformatics” held on March 13-14, 2013 Sponsored by Department of Biotechnology Ministry of Sciences & Technology, Govt. Of India, New Delhi, Organized by Distributed Information Sub-Centre Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh (U.P.) India.

- Two days International Conference on “Chemistry: Frontiers and Challenges” held on March 02-03, 2013 under UGC-SAP (DRS-I). Organized by Department of Chemistry, Aligarh Muslim University, Aligarh (U.P.) India.

MEMBERSHIP OF PROFESSIONAL BODIES

- Life member of Society for NeuroChemistry, India (SNCI)

SUPERVISED STUDENTS FOR THEIR DISSERTATION

Graduation Students = 04

Post-Graduation (As internal advisor) = 01

AWARDS, FELLOWSHIPS AND RECOGNITIONS

- Worked as Project fellow in Interdisciplinary Biotechnology Unit, AMU, Aligarh and received UGC research fellowship 2011-2014.
- Awarded Best poster award for poster presentation on “Fluoroalcohols mediated amyloid induction in conalbumin (ovotransferrin): a metalloproteinase from hen egg white” during “National Symposium Cum Bioinformatics workshop on New Facet of Biotechnology from Genes to Proteins” held on January 15-17, 2014, Sponsored by UGC and DBT, Govt. Of India, New Delhi, Organized by Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh (U.P.) India.
- Awarded UGC-BSR Fellowship (JRF) for Ph.D. program during 2014-2016.
- Awarded UGC-BSR Fellowship (SRF) for Ph.D. program during 2016-2017.

EXPERIMENTS PERFORMED / RESULTS ANALYSED

- Circular Dichroism (CD)
- Fluorescence Spectroscopy
- UV- Visible Spectroscopy
- Transmission Electron Microscopy (TEM)
- Scanning Electron Microscopy (SEM),
- Dynamic Light Scattering (DLS)
- Isothermal Titration Calorimetry (ITC)

COMPUTER SKILLS/ OTHER LAB ACTIVITIES

Well versed with Windows, MS Word, Power Point, Excel, Endnote and Various data bases such as Medline, Pubmed, Elsevier, Science direct etc.

Online software handling: **K₂D**, **K₂D₂**, and **K₂D₃**. Online Software for the determination of secondary structure of protein from CD spectra.

ExPASy: A bioinformatics resource portal helps in accessing many scientific resources, databases and software tools in different areas of life sciences.