

Dr. Mohammad Mohidus Samad Khan

PhD (Monash Uni, AUS), Post-Doc (McGill Uni, CAN)

Chief Sustainability Officer (CSO) and

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and

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Field of Expertise: Biotechnology; Environmental Engineering; Project Management; Innovation.

Interest and Strength: Bioprocess Engineering; Biomedical Engineering; Cleaner Production Options; Project Management; Gap Analysis; Industrial Pollution Control; Chemical and Occupational Safety.

Education:

Jun'10 – Sept'13: Post-Doctoral Fellowship on Bio-surface Engineering and Biomolecular Simulation, McGill University, Canada

under the supervision of Prof. Theo van de Ven and Prof. Tony Whitehead (Department of Chemistry, McGill University).

Oct'06 – Mar'10: PhD on Bio-surface and Biotechnology Engineering, Monash University, Australia

PhD Project, 'Bioactive Papers: Printing, Activity and Stability', under the supervision of Prof. Gil Garnier and Prof. Wei Shen (Department of Chemical Eng, Monash University).

Sep'99 – Jul'04: BSc in Chemical Eng, Bangladesh Uni of Eng. and Tech. (BUET), Dhaka

Undergrad Thesis (one year) project, 'Study of Wastewater Treatment Process of a Synthetic Fabric Dyeing Plant', under the supervision of Prof. Sabder Ali (BUET).

Professional Experiences:

Jun'2021 Onward: Chief Sustainability Office and Head of Operations of Beeximco Health and PPE, Bangladesh Export Import Company (BEXIMCO) Ltd.

The work responsibility includes Beximco Sustainability Initiatives and Projects, and Head of Operations of Beximco Health and PPE.

As the CSO closely working with Beximco Top Management and Admin, Company HR and Compliance, Engineering, Utility and Maintenance Units, Supply Chain, Marketing and Merchandising, Power Generation, Chemical Storage and Waste Management teams on industrial and environmental sustainability issues.

As a part of Beximco Health and PPE, heading product development, production, quality control, commercial, marketing and merchandising related issues.

Nov'2020 – Dec'2021: Member of Technical Advisory Group, Access to Medicines and Health Products Division, WHO Geneva (HQ).

This technical advisory work supports different work group under the headquarters of WHO, such as: i) WHO TAG on PPE team, ii) WHO Prequalification of PPE, MDs and IVDs team, and iii) WHO Local Production and Technology Transfer

of PPE, MDs and IVDs team, to develop prequalification requirements and technological assessment of PPE items and manufacturers.

Apr'2020 – Jul'2021: National Consultant for Identification of Local Options for Quality Testing of Personal Protective Equipment (PPE) during COVID-19 Pandemic, WHO

This work supports national health authorities in Bangladesh to develop a national quality control system for priority PPE items, which will inform procurement decisions by government and other agencies (DGDA, WHO, USAid, and JICA) through the identification of local solutions for testing PPE according to internationally accepted standards, outlined by WHO in the disease commodity package for COVID-19.

Mar'18 onward (on leave): Associate Professor, Dept of Chem Eng, Bangladesh Uni of Eng and Tech (BUET)

This work encompasses Teaching, Research, Consultancy and Departmental activities.

Teaching – Courses Taught: ChE 6504 (Fermentation Technology), ChE 6505 (Biochemical Engineering), ChE 473 (Biochem Eng I), ChE 475 (Biochem Eng II), ChE 203 (Chem Eng Thermo I), ChE 485 (Industrial Pollution Control), ChE 481 (Environmental Engineering I), ChE 411 (Economics and Management of Chemical Process Industries).

Design and Consultancy – Provide consultancy services to Biotechnological and Environmental Projects funded by Govt of Bangladesh, IFC-World Bank, JICA, European Funding Agencies and Local Industries.

Industrial Waste Management, Chemical Safety and Management, Environmental Impact Assessment (EIA), Environmental and Social Impact Assessment (ESIA), Bioprocess Engineering, etc.

- Working on Industrial Waste Management, Chemical Management and Environmental issues since 2004; working experience with different waste management options including Physico-Chemical, Biological and Zero-Discharge techniques.
- Hands-on experience in designing and troubleshooting textile (dyeing and washing) and pharmaceutical Effluent Treatment Plants (ETPs).
- Certified trainer (CSP-US Department of State) for chemical inventory, management and accountability
- Technological assessment of Green Energy and Biofuel production options.
- Prefers to mix Technical Consultancy with Research Approach

Research – supervising different research projects on Health and Food, such as: Food Processing and Preservation, Low-Cost Diagnostics to Detect Biomarkers in Biofluid, Biofuel Production from Biomass, Biological Effluent Treatment, Resource Recovery from Solid Waste, and Environmental Engineering, etc.

Nov'13 – Mar'18: Assistant Professor, Dept of Chem Eng, Bangladesh Uni of Eng and Tech (BUET)

Oct'16 – Jan'17: Visiting Research Scholar, Texas A&M University, USA

Jun – July'15: Visiting Professor, McGill University, Canada

Jun'10 – Sept'13: Post-Doctoral Fellow, McGill University, Canada

This work encompassed Theoretical and Experimental research. The Experimental research work aimed developing Antibody active paper and cellulose beads to detect and filter **bacteriophage 'T7'**. The Theoretical research work aimed to perform molecular modelling of building blocks of Picloram antibody, 3D Homology modelling of Antibody Binding Fragments, and Quantum Calculation of Antibody-Antigen Interaction Energies at different physiological conditions.

Feb-May'10: Post-Doctoral Researcher, Monash University, Australia

This project developed bioactive enzymatic papers and low-cost paper diagnostics for blood typing. Main focuses of the project were to deliver enzymes and proteins in a controlled pattern on paper, to investigate activity, stability, selectivity, aging, fixation and retention of enzymes on paper.

Jan'07 – May'10: Casual Academic/Sessional Teacher, Monash University, Australia

Course Taught - CHE2165 (Bio-nano Engineering), MEC2404 (Fluids Mechanics), CHE3161 (Chemistry and Chemical Thermodynamics), CHE3164 (Reaction Engineering), CHE4180 (Chemical Engineering Project), CHE4163 (Transport Phenomena and Numerical Methods).

May-Sept'06: Environmental Consultant and Engineering Design, Renata Ltd., BD

Work independently to design the 'Effluent Treatment Plant, ETP' and to develop the 'Waste Management Plan' for Renata Limited, a prominent pharmaceutical industry in Bangladesh (www.renata-ltd.com).

Sep'04-Aug'06: Project Engineer, ETP, ISM Project

ISM was an international research project aiming pollution abatement. The project was funded by DFID (UK), USAID (US), Dept of Env (DoE) of Bangladesh Govt; and was undertaken by Bangladesh Centre for Advanced Studies (BCAS), Stockholm Env Inst (SEI) and Uni of Leeds, UK. This project worked to identify and reduce industrial water pollution in the Turaag River and surrounding wetlands. **Key Responsibilities:** Identifying and measuring water pollution in the Turaag River; Helping industries to establish and troubleshoot Effluent Treatment Plants; Report Writing; Scientific Publication; Presenting Research works to the Industry and Local community.

2007-2008: Monash University

- Safety and Lab Manager: Chemistry Lab (2007-08) and Humidity Controlled Lab (2008-09), APPI, Monash University.
- Member of Safety Committee, Dept of Chem Eng, Monash University.

Jul'98 – Jun'00: Lab Assistant Demonstrator, Physics Lab, Notre Dame College

- Demonstrate different lab experiments; ● Marking reports; ● Maintain lab equipment

Major Grants:

- ✓ WHO Grant on BDT 6.28 million (year 2020-21; ~USD \$73,930) for the project: Technical assistance to develop specification and guiding documents for quality assurance and market surveillance of PPE during the Covid-19 pandemic; Applicant: **M.S. Khan** (PI).
- ✓ European Research Fund of €188,950 Euro (year 2020-21) for the project: Developing Accredited Local Facilities to Test Biological Parameters & Support the Local RMG Sector for Producing Medical PPE; Applicant: **M.S. Khan** (PI).
- ✓ European Research Fund of €1,137,925 Euro (year 2018-21) for the project: Environmental Sustainability through Local Capacity in Textile Chemical and Waste Management; Applicant: **M.S. Khan** (PI).
- ✓ Departmental Development Grant (Bio-incubator) of BDT 99.6 million (year 2019-2022; ~USD \$1,171,765) by the Ministry of Education, People's Republic of Bangladesh for the project: Establishment of an Applied Bioengineering Research Incubator (ABRI) at BUET (বাংলাদেশ প্রকৌশল বিশ্ববিদ্যালয়ে একটি এপ্লাইড বায়োইঞ্জিনিয়ারিং গবেষণা ইনকিউবেটর স্থাপন); Applicants: S. Ahmed, M. A. A. S. Choudhury, **M. S. Khan**, N. Islam, S. S. Razia and G. M. T. Islam.
- ✓ Solidaridad Research Fund of BDT 31,70,000/- (year 2017-19) for the project: Measuring Water Footprint and Sustainable Use of Water in the Leather Cluster of Savar in Bangladesh; Applicant: **M.S. Khan**.
- ✓ BCEF Academic Research Fund of BDT 9,50,000/- (year 2014-16) for the project: Paper Based Detection of Health Hazard Components in Chemically Adulterated Foods; Applicant: **M.S. Khan**.
- ✓ CASR-BUET Research Grant of BDT 3,46,000/- (year 2014-16) for the project: Low cost Paper Diagnostics for the Qualitative and Quantitative Detection of Harmful Chemicals Used in Food Processing and Preservation; Applicant: **M.S. Khan**
- ✓ BCEF Academic Research Fund of BDT 90,000/- (year 2013) for the project: Computational Modelling in Biotechnology; Applicant: **M.S. Khan**.
- ✓ CSACS (Centre for Self-Assembled Chemical Structures) ECO Grant of \$20,000 CAD, for Feb 2011 to Jan 2012; Applicants: T.G. van de Ven (PI) and **M.S. Khan**.
- ✓ SENTINEL Summer Student Grant 2012 and 2013; Applicants: T.G. van de Ven (PI) and **M.S. Khan**.

Major Awards, Scholarships and Achievements:

- ✓ Winner of 'Young Innovator Award 2012' entitled 'TR35@Singapore Awards' organized by the 'MIT Technology Review Inc' to recognize the top innovators in the Asia-Pacific regions under the age of 35 for *Developing Paper Diagnostic for Blood Typing* *.
- ✓ Vice-Chancellor's commendation (2010) for Doctoral Thesis Excellence (known as: *Mollie Holman Doctoral Medal*) as a recognition of Excellence in PhD Research.
- ✓ Kenneth Hunt Medal (2010) from *Monash Engineering Faculty* for the Best Engineering PhD Thesis.
- ✓ Finalist for 'IChemE 2010 Award: the Young Engineer' of the Year sponsored by GlaxoSmithKline (GSK) and Institute of Chemical Engineers' (IChemE), UK.
- ✓ State Winner (VIC) in '2009 AusBiotech-GSK Student Excellence Awards' for the PhD work on 'Bioactive Papers'; AUS national award is for the postgrad (PhD) students working in Biotechnology.
- ✓ 'iCFP2016 Young Scientist Award' in recognition of the Outstanding Young Research in 2nd International Conference on Food Properties (iCFP2016), Bangkok, Thailand, 2016.

- ✓ Monash Post Graduate Publication Award (2009); Monash Postgraduate Research Travel Grant (2009); Monash Graduate Scholarship (2006-09); Monash Departmental Scholarship (2006-09); Monash Research Scholarship.
- ✓ Selected as one of the 'Ten High Achieving International Students' from the Engineering Faculty, Monash University in 2008, as a recognition of Academic Achievements.
- ✓ iCFP2016 Best Paper Award on *Mass Transfer Properties, Mass-volume-area related Properties & Mechanical Properties Track* for the paper entitled: 'Analyzing Diffusivity of Formaldehyde in Formalin Treated Fish Samples: 'Catla catla'', at the 2nd International Conference on Food Properties (iCFP2016), Bangkok, Thailand, 2016.
- ✓ iCFP2016 Best Paper Award on *Health and Wellness & Medicinal Properties Track* for the paper entitled: 'Measuring and Analyzing Dental Erosion Caused by Beverages and Bottled Drinking Water in Bangladesh', at the 2nd International Conference on Food Properties (iCFP2016), Bangkok, Thailand, 2016.
- ✓ Selected and Featured in the special edition (21st Anniversary, 2012) of Daily Star Bangladesh as one of the 'Young and Future Leaders of Bangladesh' working in national and international level.
- ✓ 'Award of Appreciation' from the International Conference on Chemical Engineering 2008, Dhaka, Bangladesh, for the contribution to organize ICChE2008 Poster Competition for undergraduate students.
- ✓ BUET Technical Scholarship (2000-04); University Merit Scholarship (BUET).

* The blood typing work was further developed in Monash Uni, and went to win Australian Eureka Prize for Innovation in Technology.

Professional Work at National and International Level:

- ✓ Member (Nov 2022 onward), Evaluation Teams (ET) for the Engineering Programs on the Chemical Engineering Sector, Board of Accreditation for Engineering and Technical Education (BAETE), IEB Bangladesh.
- ✓ Member (Sept 2022 onward), Sectoral Committee (SC) for the Engineering Programs on the Chemical Engineering Sector, Board of Accreditation for Engineering and Technical Education (BAETE), IEB Bangladesh.
- ✓ Member (Dec 2020 onward), Technical Committee for Circular Economy and Riverine Plastics Pollution Management, Ministry of Water Resources (Bangladesh Water MSP) (Ref: Gazette No. 42.00.0000.039.15.527 dated December 3, 2015 of Ministry of Water Resources)
- ✓ Technical Team Lead (Apr 2020 onward), Standardization and Quality Control of Personal Protective Equipment (PPE) as Emergency Response of COVID-19 Pandemic, UNDP-WHO-USAid-DGDA.
- ✓ Member and Co-Chair (May 2017 onward), 'Fine Chemicals' Committee, Bangladesh Standards and Testing Institute (BSTI), Ministry of Industries, Government of the People's Republic of Bangladesh.
- ✓ Technical Team Lead (Aug 2017 onward), Technical Working Group formed by Solidaridad Network Asia Limited to "Measuring Water Footprint and Sustainable Use of Water in the Leather Cluster of Savar in Bangladesh".
- ✓ Member (2016 onward), The National Steering Board of Bangladesh Water Multi-Stakeholder Partnership, Ministry of Water Resources (Bangladesh Water MSP) (Ref: Gazette No. 42.00.0000.038.18.039/15 dated December 6, 2015 of Ministry of Water Resources)
- ✓ Member (2017 onward), Industrial Water and Wastewater Management Work Stream, Bangladesh Water MSP, Prime Minister's Office, Government of the People's Republic of Bangladesh.
- ✓ Member (2017), Committee to develop guideline for 'Production, Processing, Packaging and Exporting Charcoal from Jute Stick', Ministry of Textiles and Jute, Government of the People's Republic of Bangladesh.
- ✓ Member, Committee to Develop Guideline to Establish Bio-Ethanol Plants in Bangladesh (2016-17), Ministry of Power, Energy and Mineral Resources, Government of People's Republic of Bangladesh.

Editor and Reviewer:

- ✓ Editor, "Pesticide Residue in Foods: Sources, Management, and Control", 2017, Publisher: Springer, New York (ISBN: 978-3-319-52681-2 (Print) 978-3-319-52683-6 (Online)).
- ✓ Member, Proceedings Sub-Committee, 4th International Conference on Chem Eng (ICChE) 2014, Dec 29-30, 2014, Dhaka, Bangladesh.
- ✓ Editor, Program and Abstract Booklet, 85th Annual ACS Colloid and Surface Science Symposium 2011, Montreal, Canada.
- ✓ Editor, Book entitled: *Cascades Festschrift in Honour of Professor Emeritus M.A. (Tony) Whitehead including The Richard Hart Symposium Scientific Papers and Reminiscences* (Revised First Edition), Cascades Inc., Quebec (ISBN-13: 978-2-9808323-6-9).
- ✓ Editor, 'ChE Thoughts' (www.chethoughts.com), the Chemical Engineering and Science.

- ✓ Journal Reviewer, 'Molecular Pharmaceutics' (ACS Publication), 'Sensors' (MDPI Publication).

Short Course and Workshop:

- ✓ Instructor, Workshop on Industrial Pollution Control, the Central Bank, Bangladesh, 2017.
- ✓ Instructor, Short Training on Effluent Treatment Plant Management, PaCT Bangladesh, IFC-World Bank, 2015.
- ✓ Instructor, Good Laboratory Practices 2015: Water Quality Analysis, Department of Environment, and Government of Bangladesh.
- ✓ Instructor, Technical Writing and Presentation Workshop 2013, Department of Chemical Engineering, BUET, Dhaka.
- ✓ Instructor, Technical Writing and Presentation Workshop 2011, Department of Chemical Engineering, BUET, Dhaka.

Organizational Activities and Experiences:

- ✓ Assistant Provost (March 2018 onward), Ahsanullah Hall, Bangladesh University of Engineering and Technology (BUET).
- ✓ Member, Organizing Committee, 4th International Conference on Food Security and Nutrition (ICFSN 2017), Prague, Czech Republic, 2017.
- ✓ Member Secretary, 4th International Conference on Chem Eng (ICChE) 2014, Dhaka, Bangladesh.
- ✓ Member, Organizing Committee, CSACS 11th Annual Meeting, May 9, 2013, Montreal, Canada.
- ✓ Member, Organizing Committee, CSACS 10th Annual Meeting, May 9-10, 2012, Montreal, Canada.
- ✓ Member Secretary, 'Sigma Xi Montreal Chapter', from Jul 2011 to June 2013.
- ✓ Convener, Student Poster Session and Poster Competition, 3rd International Conference on Chem Eng 2011, Dhaka, Bangladesh.
- ✓ Convener, Student Poster Session and Poster Competition, 2nd International Conference on Chem Eng 2008, Dhaka, Bangladesh.
- ✓ Moderator, 'ChemicalBUET', an organization dedicated to the students, academics and alumni of the Department of Chemical Engineering, BUET.

Professional Accreditation and Association:

- ✓ Professional Engineer (Engineers Australia; Level-1).
- ✓ Member, Australia's Biotechnology Organisation (AusBiotech), American Chemical Society (ACS), Sigma Xi, APPITA, The Institute of Engineers, Bangladesh (IEB), Bangladesh Chemical Engineering Alumni Association.
- ✓ Associate Member, Institute of Chemical Engineers (ICChemE)

Language: Fluent in English and Bengali.

For more information please visit: www.estexbd.com, www.mohidkhan.com

Research Publications:

(Citations: 1529; h-index: 19, i10-index: 29; source: google scholar, date: 26-December-2022)

Patents:

1. **M.S. Khan**, M. N. Islam, I. Ahmed, M. I. Anik and M. S. Ferdous, "A Device & the Apparatus for (Uric Acid) Analysis of Bio-fluid", Bangladesh Patent, 1006215, 05 Mar, 2020; US Provisional Patent, 62672580.
2. **M.S. Khan**, M. N. Islam, and M. Mursalat, "Low-Cost Paper Diagnostics for the Qualitative and Quantitative Detection of Formaldehyde (Formalin, Primary Aldehyde) in Food, Water and other Biofluids", Bangladesh Patent, 1006040, 16 Sept, 2018; US Provisional Patent, 62457901, 12 Feb, 2017.
3. **M.S. Khan**, X. Li, G. Thuas, W. Shen and G. Garnier, "Testing Device for Identifying Antigens and Antibodies in Biofluids", PCT/AU2010/001255, 24 Sept, 2009; US20120322086 A1, US11391746B2 (Jul 19, 2022), CN102576017A, EP2480885A1, EP2480885A4, WO2011035385A1.
4. W. Shen, J. Tian, X., Li, **M.S. Khan**, G. Garnier, "Methods for Fabricating Microfluidic Systems", PCT/AU2009/000889, 10 July, 2009; US20120009662, CN102119056A, EP2300165A1, WO2010003188A1.
5. W. Shen, J. Tian, X. Li, **M. Khan**, G. Garnier, "Method of Fabricating Paper-Based Microfluidic Systems by Printing", Australian Provisional Patent, 2008905776, 7 Nov, 2008.

Book and Booklet:

6. "Techniques to Measure Food Safety and Quality", ed. **M. S. Khan**, M. S. Rahman, Publisher: Springer, New York (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
7. "Pesticide Residue in Foods: Sources, Management, and Control", ed. **M. S. Khan**, M. S. Rahman, 2016, Publisher: Springer, New York; 2017. (Hardcover ISBN 978-3-319-52683-2; eBook ISBN 978-3-319-52683-6).
8. **M.S. Khan**, G. Garnier and W. Shen (2010), "Printing, Specificity and Stability of Enzymatic Bioactive Papers", VDM Publishing House Ltd (ISBN: 978-3-639-31878-4; DOI: 10.13140/RG.2.1.3675.2482).
9. **M.S. Khan**, J. Knapp, A. Clemett, M. Chadwick, M.A. Mahmood (2006), "Managing and Monitoring Effluent Treatment Plants", *Booklet series, Managing Industrial Pollution from Small and Medium Scale Industries in Bangladesh*, R8161-ETP, Department for International Development (DFID), UK (ISBN: 984-8121-08-0; DOI: 10.13140/RG.2.1.1840.2408).

Book Chapters:

10. **M. S. Khan**, M. S. Rahman (2021) "Alternatives of Pesticides" (2021), in "Introduction on Techniques to Measure Food Safety and Quality", ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 1, pp. 1-10 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
11. F. Nowshad, N. Mustari, **M. S. Khan** "Overview of Microbial Contamination of Foods and Associated Risk Factors" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 2, pp. 11-30 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
12. S. K. Nabil, N. Mustari, **M. S. Khan** "Sources and Health Impacts of Chemical Contaminants in Foods" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 3, pp. 31-68 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
13. F. Haque, S. Y. Bubli, **M. S. Khan** "UV-vis Spectroscopy for Food Analysis" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 8, pp. 169-194 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
14. S. Y. Bubli, F. Haque, **M. S. Khan** "Gas Chromatography and Mass Spectroscopy (GC-MS) Technique for Food Analysis" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 9, pp. 195-218 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
15. F. Nowshad, **M. S. Khan** "Electronic Tongue for Food Safety and Quality Assessment" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 11, pp. 229-248 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
16. M. M. R. Khandaker, **M. S. Khan** "Paper Based Detection Techniques for Food Analysis and Authentication" (2021), ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York, 2021, Chapter 12, pp. 249-282 (ISBN 978-3-030-68635-2 (print)), 978-3-030-68636-9 (Online) (DOI: 10.1007/978-3-030-68636-9).
17. **M. S. Khan**, S. K. Nabil, H. A. Mahbub, M. R. Khandaker (2020), "Bioactive Papers for Health, Food and Environmental Applications", in "Science and Technology Innovation for a Sustainable Economy", ed. M. Hossain, M. Islam, B. Roy, Publisher: Springer Nature, 2020, pp.155-177 (ISBN: 978-3-030-47165-1 (Print), 978-3-030-471668-8 (Online)).
18. M. S. Rahman, K-E. Afaf, Z. A-Attabi, **M. S. Khan**, I. M. Al Bulushi, N. Guizani, N. Al-Habsi, "Selected Sensor Technology Innovation in Food Quality and Safety" (2020), in "Science and Technology Innovation for a Sustainable Economy", ed. M. Hossain, M. Islam, B. Roy, Publisher: Springer Nature, 2020, pp.59-88 (ISBN: 978-3-030-47165-1 (Print), 978-3-030-471668-8 (Online)).
19. **M. S. Khan**, N. Mustari (2020), "Pesticide Residues in Foods: It's Sources and Reduction", in "Handbook of Food Preservation, Third Edition", ed. M. S. Rahman, Publisher: CRC Press, FL, USA, 2020, Chapter 59, pp 1019-1033 (ISBN: 978-1-4987-4048-7).
20. M. N. Islam, S. F. Bint-E-Naser, **M. S. Khan** (2017), "Pesticide Food Laws and Regulations", in "Pesticide Residue in Foods: Sources, Management, and Control", ed. M. S. Khan, M. S. Rahman, Publisher: Springer, 2017, pp. 37-51 (ISBN: 978-3-319-52681-2 (Print) 978-3-319-52683-6 (Online)).

21. M. Debnath, **M. S. Khan** (2017), "Health Concerns of Pesticide", in "Pesticide Residue in Foods: Sources, Management, and Control", ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York; 2017, pp. 103-118 (ISBN: 978-3-319-52681-2 (Print) 978-3-319-52683-6 (Online)).
22. L. Hossain, R. Rahman, **M. S. Khan** (2017), "Alternatives of Pesticides", in "Pesticide Residue in Foods: Sources, Management, and Control", ed. M. S. Khan, M. S. Rahman, Publisher: Springer, New York; 2017, pp. 147-165 (ISBN: 978-3-319-52681-2 (Print) 978-3-319-52683-6 (Online)).
23. M. N. Islam, M. Mursalat, and **M. S. Khan** (2016), "A Review on the Legislative Aspect of Artificial Fruit Ripening", *Advances in Food Additives*, H. Naegeli, C. S. Huh, et al., Scientific Research Publishing, Chapter 3, pp. 45-69. (ISBN: 978-1-61896-278-2).
24. L. Hossain, S. F. Bint-E-Naser, **M. S. Khan** (2017), "A Case Study: A Review on Prospects and Constraints of Bioethanol Production in Bangladesh", in "Biofuels: Advances & Perspectives", ed. G. Kaushik, S. Chaturvedi, A. Chel, Publisher: Studium Press LLC, USA, 2017, Chapter 5, pp. 69-86 (ISBN: 978-93-85046-22-3).
25. F. Ahmed, A. Ferdous, **M. S. Khan** (2017), "Algae in a vat may power the future: A Review on Algal biodiesel production", in "Biofuels: Advances & Perspectives", ed. G. Kaushik, S. Chaturvedi, A. Chel, Publisher: Studium Press LLC, USA, 2017, Chapter 10, pp. 193-220 (ISBN: 978-93-85046-22-3).
26. **M.S. Khan**, and G. Garnier (2014), "Novel Image Analysis Technique to Measure Enzymatic Activity and Stability on Paper Surfaces", *Advances in Image Analysis Research*, Ed. R. M. Echon, Nova Publishers, Chapter 10, pp. 217-238. (ISBN: 978-62948-602-4; DOI: 10.13140/RG.2.1.3413.1041).
27. G. Garnier, **M.S. Khan**, Y. Ngo, W. Mosse (2013), "Paper, Printing and Apple Pie", *Fundamental and Applied Pulp and Paper Modelling Symposium (FAPPMS) 2011*, Ed. Gaudreault, R., Robert, S., and Whitehead, M.A., Cascades Inc., Kingsey Falls, Quebec, chapter-12, pp. 147-183 (ISBN: 978-2-9808323-7-6; DOI: 10.13140/RG.2.1.1027.1844).
28. **M.S. Khan**, M.A. Whitehead, and T.G.M. van de Ven (2013), "Semi-Empirical (PM3) Molecular Modelling of Amino Acids Available in Picloram (4-Amino-3,5,6-trichloropyridine-2-carboxylic Acid) Antibody", *Fundamental and Applied Pulp and Paper Modelling Symposium (FAPPMS) 2011*, Ed. Gaudreault, R., Robert, S., and Whitehead, M.A., Cascades Inc., Kingsey Falls, Quebec, chapter-9, pp. 99-115 (ISBN: 978-2-9808323-7-6; DOI: 10.13140/RG.2.1.1373.2966).
29. **M.S. Khan**, J. Tian, L. Xu, W. Shen, G. Garnier (2009), "Bioactive Enzymatic Papers", in: S.J. I'Anson (Ed.), *Advances in Pulp and Paper Research, Oxford 2009*, The Pulp & Paper Fundamental Research Society, 2009, pp. 1149-1166. (ISBN: 978-0-9545272-6-6) (DOI: 10.13140/RG.2.1.2487.4084).

Journal Articles:

30. **M. S. Khan**, M. M. R. Khandaker, S.A. Shadman "Advances and Current Trend of Bioactive Papers and Paper Diagnostics for Health and Biotechnological Applications", *Current Opinion in Chemical Engineering* (publisher: Elsevier) (accepted, in press).
31. M. Ahmed, M. A. Abir, **M. S. Khan** (2021), "Technical and Economic Aspects of Reusing Textile Effluent as Process Water: A Case Study of Denim Washing Factory", *Chemical Engineering Research Bulletin*, **22(1)**, 127-132. (<https://doi.org/10.3329/ceerb.v22i1.54312>)
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66. L. Hossain, S. K. Sarker, **M. S. Khan**, "Evaluation of Present and Future Wastewater Impacts of Leather Industries in Bangladesh", 5th International Conference on Chemical Engineering (ICChE) 2017, Dhaka, Bangladesh, 2017, Article 145, pp. 349-356.
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91. M. Momtaz, S. Yesmin, **M. S. Khan**, "A Review on Food Adulteration", Manuscript is under preparation and will be submitted to *Agriculture & Food Security* (publisher: Springer Nature).
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3. **M.S. Khan**, M.A. Whitehead, T.G. van de Ven, "3D Molecular Simulation of Antigen-Antibody Interaction", *The 85th Colloids and Surface Science Symposium*, Montreal, Canada, 2011.
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7. D. Fon, **M. S. Khan**, W. Shen, M.K. Horne, C. Parish, D.R. Nisbet, J.S. Forsythe, (2009) "Neural Stem Cell Response to Hydrophilic Patterned Electrospun PCL", *11th Pacific Polymer Conference*, Carins, Australia, 2009.

Major Conference, Workshop and Public Lectures:

1. **Quality Assurance of PPE in Emergency Response of COVID-19.**
Webinar on Living with Covid 19: Issue, Challenges and the Way Forward, BUET Alumni Association, February 2021.
2. **Visual Inspection for PPE (Gowns, Coveralls, Fabric Masks, Surgical Masks, N95/KN95 Respirators).**
Seminar on Workplace Biosafety, Institute of Engineers' Bangladesh, Dhaka, January 2021.
3. **Quality Assurance of PPE in Emergency Response of COVID-19: Challenges and Lessons Learned.**
Webinar on Technical and regulatory aspects of Personal Protective Equipment (PPE) in the COVID-19 Response in Bangladesh, Director General of Drug Administration (DGDA), Dhaka, December 2020.
4. **Bioactive Papers: A Futuristic Tool for Health, Food, and Environmental Applications.**
Sixth International Conference on Chemical Engineering (ICChE 2020), Dhaka, December 2020.
5. **Chemical Mapping in Textile and Leather Sector: Consumption, Safety and Management.**
International Symposium on Chemical Safety and Security Management 2020, Shena Malancha, Dhaka Cantonment, February 2020.
6. **Leather Chemical Mapping: Consumption, Safety and Management.**
Promoting Safe Use of Chemicals (PSUC), Solidaridad Asia Network, Pan Pacific Sonargaon, Dhaka, Feb 2020.
7. **Industrial Water and Sanitation: Choosing and Managing ETP, STP and Rainwater Harvesting for Textile Industries.**
ETP Training Series, Bangladesh University of Engineering and Technology, BUET, May 2019.
8. **Workshop on Textile Chemical Safety and Management.**
TexChem Training Series, Bangladesh University of Engineering and Technology, BUET, April 2019.
9. **Technical Workshop on Textile Effluent Management: Choosing, Monitoring and Managing ETPs.**
ETP Training Series, Bangladesh University of Engineering and Technology, BUET, December 2018.
10. **Evaluation of Present and Future Wastewater Impacts of Textile Dyeing Industries in Bangladesh.**
2nd Water Bangladesh Int'l Expo, International Convention City, Bashundhara, Dhaka, Oct 2018.
11. **Zero Discharge of Hazardous Chemicals (ZDHC): Future of Environment Friendly Business.**
Dye+Chem Bangladesh Expo'17, International Convention City, Bashundhara, Dhaka, August 2017.
12. **Workshop on Capacity Building on Environmental & Social Safeguard.**
Bangladesh Bank, Central Bank of Bangladesh, BRAC-CDM, Gazipur, September 2017.
13. **Short Training on Effluent Treatment Plant Management for Industries and Buyers.**
Bangladesh PaCT, IFC World bank Group, Dhaka, November 2015.
14. **Molecular Modelling of Antibody-Antigen Interactions to Guide Experimentation.**
Tony Whitehead Symposium, Otto Maass Chemistry Building, McGill University, June 2015.
15. **Training on Good Laboratory Practice for Officials of the Department of Environment (DoE).**
Department of Chemical Engineering, BUET. March-April 2015.
16. **Workshop on Technical Presentation and Poster Preparation.**
Satyen Bose Science Club, BUET, Dhaka, March 2015.
17. **Bioactive Papers: Past, Present and Future.**
April 2013: Biomedical Engineering Department, Faculty of Medicine, McGill University.
March 2013: Department of Chemical Engineering, Bangladesh University of Engineering and Technology.
February 2012: Sigma Xi Lecture, Sigma Xi Montreal Chapter, Montreal, Canada.
18. **Development of Antibody Based Filters: Theoretical and Experimental Approaches.**
May 2013: 2013 BIO World Congress on Industrial Biotechnology, Montreal, Canada.
May 2013: CCG UGM & Conference 2013, Montreal, Canada.
February 2013: PaperWeek Canada 2013, Montreal, Canada.
19. **3D Molecular Modelling of Antigen-Antibody Interactions**
2013 BIO World Congress on Industrial Biotechnology, May 2013, Montreal, Canada.
20. **Detection and Deactivation of T7 Bacteriophages using Antibody Conjugated Beads.**
CSACS ECO Grant Winner Lecture, CSACS Annual Meeting, May 2013.

21. **Technical Writing and Presentation.**
 April 2013: *Workshop on Technical Writing and Presentation for the Undergrad Students* of Dept. of Chem Eng, BUET.
 Jan 2010: *Workshop on Technical Writing and Presentation for the Undergrad Students and Fresh Graduates* of Dept. of Chemical Engineering, BUET.
22. **Blood Typing Using Chromatographic Separation on Antibody Treated Paper.**
 International Conference on Chemical Engineering (ICChE) 2011, Dhaka, Bangladesh.
23. **3D Molecular Simulation of Antigen-Antibody Interaction.**
 The 85th Colloids and Surface Science Symposium, Montreal, Canada, 2011.
24. **Semi-empirical Molecular Modelling of Picloram Specific Antibody.**
 The 11th Annual CERMM Symposium, Montreal, Canada, 2011.
25. **Molecular Modelling of Antigen-Antibody Interaction using the PM3 Semi-Empirical Method.**
 Fundamental and Applied Pulp and Paper Modelling Symposium (FAPPMS) 2011, Montreal, Canada.
26. **Managing Pollution from Small and Medium Scale Industries in Bangladesh.**
 Sigma Xi Young Researcher Lecture, 2011, Sigma Xi Montreal Chapter, Montreal, Canada.
27. **Stability and Reactivity of Enzymatic Papers.**
 2009 AIChE Annual Meeting, Nashville, TN, USA.
28. **Thermal Stability of Horseradish Peroxidase Enzymatic Papers.**
 63rd Appita Annual Conference and Exhibition, 2009, APPITA, Melbourne, Australia.
29. **An Analysis of Effects of Internal and Surface Sizing on Ink Jet Printing Quality.**
 63rd Appita Annual Conference and Exhibition, 2009, APPITA, Melbourne, Australia.
30. **Printing Biomolecules Part-1: Achieving Total Control of Biomolecule Delivery Using Ink Jet Printing.**
 Chemeca 2008, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW.
31. **Ink Jet Printing of Biomolecules on Porous Surfaces.**
 International Conference on Chemical Engineering (ICChE) 2008. Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh.
32. **The Inertial Effects on the Capillary Flow in Surface Grooves.**
 Chemeca 2008, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW, Australia.
33. **Mechanism of Non-Coalescence for Liquid Droplets at the Air-Liquid Interface.**
 Chemeca 2007, Engineers Australia, Melbourne, Australia.
34. **Introductory of Effluent Treatment Plant (ETP) Network.**
 Workshop on Supporting Improved Effluent Treatment in the Textile Sector in Bangladesh, BRACK INN, Dhaka, Bangladesh, 2005
35. **Pollution Project: Investment Support to MACH.**
 DUTCH Club, Dhaka, Bangladesh, 2005.