Mohidus Samad Khan | PhD

 

Strength: Innovation, Creativity, Process Integration, Simplification and To-Do Approach.

Fields of Interest: Biotech, Biochem, Food and Environmental Engineering; Engineering Education.

Professional Experiences:

**Nov’13 onward: Assistant Professor, Dept of Chem Eng, Bangladesh Uni of Eng and Tech (BUET)**

This work encompasses Teaching and Research activities.

Teaching – currently offering the following courses: ChE 473 (Biochemical Engineering I) and ChE 475 (Biochemical Engineering II).

Research – supervising different research projects on socio economic issues, which are Biotech, Food and Environmental Engineering, such as: Food Processing, Artificial Fruit Ripening, Battery Recycling, Low-Cost Diagnostics to Detect Biomarkers.

**Jun’10 – Dec’13: Post-Doctoral Fellow, McGill University**

This work encompasses 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**

This project developed bioactive enzymatic papers. Main focuses of the project were to deliver enzymes in a controlled pattern on paper, to investigate activity, stability, selectivity, aging, fixation and retention of enzymes on paper.

**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](http://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.

Education:

**Oct’06 – Mar’10: PhD in Chemical/Biochemical 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).

Major Awards, Scholarships and Achievements:

* **Vice-Chancellor’s commendation for Doctoral Thesis Excellence** (known as: *Mollie Holman Doctoral Medal*) as a recognition of Excellence in PhD Research.
* **Kenneth Hunt Medal** from *Monash Engineering Faculty* for the **Best Engineering PhD Thesis**.
* Winner of '**Young Innovator Award 2012**' entitled '[***TR35@Singapore Awards***](http://www.technologyreview.in/computing/39920/?p1=A1)' 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 \**.
* **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 Biotehcnology*.*
* **Finalist** for the international **IChemE the Young Engineer of the Year 2010 Award** sponsored by GlaxoSmithKline (GSK) and Institute of Chemical Engineers’ (IChemE), UK.
* **Research Grant:** a) 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**. b-c) SENTINEL Summer Student Grant 2012 and 2013 Applicants: T.G. van de Ven (PI) and **M.S. Khan**.
* **Monash Post Graduate Publication Award**; **Monash** **Postgraduate Research Travel Grant**; **Monash Graduate Scholarship**; **Monash Departmental Scholarship**; **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.
* **BUET Technical Scholarship**; **University Merit Scholarship** (BUET).
* Selected and Featured in the special edition 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.

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

Teaching Experiences:

**Dec’13 onward: Assistant Professor, BUET**

● ChE 473 - Biochemical Engineering I. ● ChE 475 - Biochemical Engineering II

**Jun’10 – Sept’13: Post-Doctoral Fellow, McGill University**

Co-supervised several undergraduate research students to computer simulate (3D) Antibody structures and experimental research to develop anti-viral Bioactive Papers. Main supervisors: Prof. Theo van de Ven and Prof. Emeritus M. A. Whitehead.

**Jan’07 – May’10: Casual Academic/Sessional Teacher, Monash University**

● CHE4180 – Chemical Engineering Project: Enzymatic Bioactive Papers (S1&S2, 2009). ● CHE4163 – Transport Phenomena and Numerical Methods (S2, 2008). ● CHE3161 – Chemistry and Chemical Thermodynamics (S1, 2007-09). ● CHE3164 – Reaction Engineering (S2, 2007-09). ● CHE2165 – Bio-nano Engineering (S1, 2007-08, 2010. ● MEC2404 – Fluids Mechanics (S1 & S2, 2007-09).

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

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

**Short Course and Workshop:** ● 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..

Editor and Reviewer:

● 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](http://www.chethoughts.com)), the Chemical Engineering and Science. ● Member of Editorial Board (since Jan 2011), Chemical Engineering Research Bulletin. ● Reviewer, Molecular Pharmaceutics, ACS. ● Reviewer, Sensors, MDPI.

Professional Development Courses and Trainings:

**Trained on:** ● *Virus Plaque Assays,* Department of Chemistry, McGill University. ● Imaging: *SEM, TEM and Confocal Imaging; Image Processing* using *High Speed Camera* with Special Lighting, *Optical Microscopy.* ● Analytical instruments: *Surface Tension Measurement*, *Viscosity Measurement*, *Plasma Treatment*, etc. ● *Induction training on Cell and Tissue Engineering Research Lab*, Monash University. ● *Lab Safety training*, McGill and Monash University. ● *Gas Cylinder Safety Training*, OHSE, Monash University. ● *Induction training in Australian Synchrotron*, Australian Synchrotron, Australia.

**Workshops:** ● Hands-on *Workshop in Micro and Nano-biotechnology (2013), Biomedical Engineering Department, McGill University;*  ● *Workshop on Molecular Modelling and Computer Simulations of Chemical Systems*, Fundamental and Applied Pulp & Paper Modelling Symposium (FAPPMS) 2011; ● *Teaching Development of Demonstrators*, Faculty of Engineering, Monash University.

Computer Programme and Simulation:

● *Molecular Simulation Software:* Molecular Operating Environment (MOE) 2011.10, Gaussian 09w and GaussView 5.0.9. ● *Chem Eng Design, Simulation and Languages:* Hysis, Aspen, Comsol Multiphysics, AutoCAD, MatLab, Design II, Fortran and Sigma Plot.

Other Activities and Experiences:

● Member Secretary, 4th International Conference on Chem Eng (ICChE) 2014, Dec 29-30, 2014, Dhaka, Bangladesh. ● Member, Organizing Committee, CSACS 10th Annual Meeting, May 9-10, 2012, Montreal, Canada. ● Member, Organizing Committee, CSACS 10th Annual Meeting, May 9-10, 2012, Montreal, Canada. ● Secretary, ‘Sigma Xi Montreal Chapter’ since Jul, 2011. ● 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 Dept of Chem Eng, BUET.

Professional Accreditation and Association:

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

Nationality: Bangladeshi Nationality

Language: Fluent in English and Bengali.

For more information please visit my website: [www.mohidkhan.com](http://www.mohidkhan.com)

Research Publications:

***Patents:***

1. **M.S. Khan,** X. Li, G. Thuas, W. Shen and G. Garnier, “Paper Based Diagnostics for Blood Analysis and Typing”, PCT/AU2010/001255, 24 Sept, 2009; US20120322086; CN102576017A; EP2480885A4; WO2010003188.
2. 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.
3. 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 Book Chapters:***

1. **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)*.*
2. 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, pp. 147-183 (ISBN: 978-2-9808323-7-6)*.*
3. **M.S. Khan**, G. Garnier andW. Shen (2010), “Printing, Specificity and Stability of Enzymatic Bioactive Papers”, VDM Publishing House Ltd (ISBN: 978-3-639-31878-4).
4. **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).
5. **M.S. Khan**, J. Tian, L. Xu, W. Shen, G. Garnier, “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).

***Peer-Reviewed Articles:***

1. M. Mursalat, A. H. Rony. A. H. M. S. Rahman, M. N. Islam, **M. S. Khan** (2013), “A Critical Analysis of Artificial Fruit Ripening: Scientific, Legislative and Socio-Economic Aspects”, ***ChE Thoughts 4*** *(1),* pp. 6-12.
2. **M.S. Khan** and G. Garnier (2013), “Direct Measurement of Enzymatic Kinetics on Bioactive Paper”, ***Chemical Engineering Science* 87**(January 2013), pp. 91-99.
3. K. Neibert, V. Gosein, A. Sharma, **M. Khan,** M.A. Whitehead, D. Maysinger, A. Kakkar (2013), ““Click” Dendrimers as Anti-inflammatory Agents with Insights from Molecular Modelling Studies."  ***Molecular Pharmaceutics* 10**(6), pp. 2502-2508.
4. M. Mursalat, A. Hasan (Rony), A.H.M.S. Rahman, M.N. Islam, and **M.S. Khan** (2013) "A Critical Analysis of Artificial Fruit Ripening: Scientific, Legislative and Socio-Economic Aspects." Manuscript accepted in ***ChE Thoughts***.
5. **M.S. Khan,** D. Kannangara, G. Garnier and W. Shen (2011) "Effect of Impact Velocity on the Wicking of a Sessile Droplet on a V-Groove."  ***Chemical Engineering Science*** **66**(23), pp. 6120-6127
6. **M.S. Khan,** G. Thouas, G. Whyte, W. Shen, and G. Garnier (2010) “Paper Diagnostics for Blood Typing”, ***Analytical Chemistry* 82**(10), pp. 4158-4164.
7. **M.S. Khan,** (2011) “Blood Line”, ***The Chemical Engineer (tce)* 836**(February 2010), pp. 22-23.
8. **M.S. Khan**, S., Haniffa, A. Slater, and G. Garnier (2010) “Effect of Polymers on the Thermal Stability of Bioactive Enzymatic Papers”, ***Colloids and Surfaces B: Biointerfaces* 79**(1), pp. 88-96.
9. **M.S. Khan**, D. Fon, X. Li, J. Tian, J. Forsythe, G. Garnier, and W. Shen (2010) “Biosurface Engineering Through Ink Jet Printing”, ***Colloids and Surfaces B: Biointerfaces*** **75** (2), pp. 441-447.
10. **M.S. Khan**, L. Xu, W. Shen, and G. Garnier (2010) “Thermal Stability of Bioactive Enzymatic Papers”, ***Colloids and Surfaces B: Biointerfaces* 75** (1), pp. 239-246.
11. **M.S. Khan**, D. Kannangara, W. Shen, and G. Garnier (2008) “Isothermal Noncoalescence of Liquid Droplets at the Air-Liquid Interface”, ***Langmuir* 24** (7), pp. 3199-3204.
12. **M.S. Khan**, S., Ahmed, A.E.V. Evans, and M. Chadwick, “Methodology for Performance Analysis of Textile Effluent Treatment Plants in Bangladesh”, ***Chemical Engineering Research Bulletin 13*** *(2)*, pp. 51-56.
13. K. B. Kabir, K. B., **M.S. Khan**, and I. Mahmud (2008), "Novel Ideas on Engineering Education in Bangladesh." ***Chemical Engineering Research Bulletin***, 12, pp. 11-19.
14. M.S. Ali, S. Ahmed, and **M.S. Khan** (2005) "Characteristics and Treatment Process of Wastewater in a Nylon Fabric Dyeing Plant." ***Journal of Chemical Engineering****, IEB*, ChE 23, pp. 17-22.
15. **Khan, M. S.**, Evans, A.E.V. and Chadwick, M. (2011) "Flow Segregation Options to Reduce Effluent Treatment Plant Running Cost." *International Conference on Chemical Engineering (ICChE) 2011*, Dhaka, Bangladesh. pp. 187-193.
16. **Khan, M. S.**, Selim, S., Evans, A.E.V. and Chadwick, M. (2011) "Characterizing and Measuring Textile Effluent Pollution Using a Material Balance Appraoch: Bangladesh Case Study." *9th International Conference on Mechanical Engineering (ICME) 2011*, Dhaka, Bangladesh. pp. RT019-025.
17. **Khan, M. S.**, Whitehead, M.A. and ven de Ven, T.G.M. (2011). "Introduction to the Semi-Empirical (PM3) Molecular Modelling of Complementary Determining Regions (CDR) of Picloram Antibody." *International Conference on Chemical Engineering (ICChE) 2011*, Dhaka, Bangladesh. pp.  268-274.
18. **Khan, M. S.**, Thouas, G., Whyte, G., Shen, W. and Garnier, G. (2011). "Blood Typing Using Chromatographic Separation on Antibody Treated Paper." *International Conference on Chemical Engineering (ICChE) 2011*, Dhaka, Bangladesh. pp. 275-280.
19. **M.S. Khan**, D. Fon, X. Li, J. Forsythe, G. Thouas, G. Garnier, W. Shen, “Printing Biomoelcules Part-1: Achieving Total Control of Biomolecule Delivery Using Ink Jet Printing”, in: D. Chen (Ed.), *Chemeca 2008*, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW, 2008, pp. 744-753.
20. **M.S. Khan**, D. Fon, X. Li, J. Forsythe, G. Garnier, W. Shen, “Ink Jet Printing of Biomolecules on Porous Surfaces”, in: N. Ahmed (Ed.), *2nd International Conference on Chemical Engineering 2008*, Bangladesh University of Engineering & Technology, Dhaka, Bangladesh, 2008, pp. 171-176.
21. D. Kannangara, **M.S. Khan**, W. Shen, “The Inertial Effects on the Capillary Flow in Surface Grooves”, in: G. Webber (Ed.), *Chemeca 2008*, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW, 2008, pp. 865-875.
22. **M.S. Khan**, D. Kannangara, W. Shen, G. Garnier, “Mechanism of Non-Coalescence for Liquid Droplets at the Air-Liquid Interface”, in: M. Rhodes (Ed.), *Chemeca 2007*, Engineers Australia, Melbourne, 2007, pp. 101-109.
23. Kabir, K. B. and **Khan, M. S.** (2007). "Engineering Education in Bangladesh: Some New Approaches." *National Symposium on Engineering and Technological Education*, Dhaka, Bangladesh.
24. **Khan, M. S.**, Ali, M. S., and Ahmed, S. (2007). "An Experimental Investigation of the Performance of an Effluent Treatment Plant." *APIEMS & CIIE Conference 2007*, Dept. of Industrial Engineering and Management, National Yunlin University of Science and Technology, Kaohsiung, Taiwan, T1-R05.

***Manuscript Submitted:***

1. **M.S. Khan**, M.A. Whitehead, T.G. van de Ven, “Theoretical Calculation of Antibody-Antigen Interactions for the Development of Antibody Based Filters”, Manuscript submitted to ***Computational and Theoretical Chemistry***.
2. **M.S. Khan**, M.A. Whitehead, C. William, T.G. van de Ven, “3D Homology Modelling of Antibody Binding Fragments (Fab) and Binding Sites of Picloram Antibody”, Manuscript in preparation for ***Chemistry & Biology***.
3. **M.S. Khan**, T. Pande and T.G.M. van de Ven, “Antibody Active Paper Sensor for ‘T7 Bacteriophages’”, Manuscript in preparation for **Analytical Chemistry***.*
4. C. J. Garvey, **M. S. Khan**, M. P. Weir and G. Garnier, “Examination of Enzymatic Bioactive Paper Nanostructure by Small Angle X-Ray Scattering”, Manuscript submitted to ***Cellulose***.

***Dissertations:***

1. **M.S. Khan**, “Bioactive Papers: Printing, Activity and Stability”, PhD Thesis, Monash University, Melbourne, 2009, pp i-xxvi, 1-288, A1-89.
2. S. Ahmed and **M.S. Khan,** “Study of Wastewater Treatment Process of a Synthetic Fabric Dyeing Plant”, B.Sc. Eng. (Chem) Thesis, Bangladesh University of Engineering and Technology (BUET), Dhaka, 2004, pp 1-97.

***Published and Industrial Reports:***

1. **Khan, M. S.**, Knapp, J., Clemett, A., and Chadwick, M. (2006). "Improving Effluent Treatment and Management." *Report, Key Document, R8161 - Section7*, Research for Development, Dept for Intl. Development (DFID), UK.
2. **Khan, M. S.** (2006), "Waste (Effluent) Management Plan and Effluent Treatment Plant Design.” Confidential Report, Renata Ltd.

***Non-reviewed Articles and Abstracts/Extended Abstracts in Conference Proceedings:***

1. **M.S. Khan**, M.A. Whitehead, T.G. van de Ven, “Semi-empirical Molecular Modelling of Picloram specific Antibody”, *The 11th Annual CERMM Symposium*, Montreal, Canada, 2011.
2. **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.
3. **M.S. Khan**, W. Shen, G. Garnier, “Thermal Stability of Horseradish Peroxidase Enzymatic Papers”, in: R. Coghill (Ed.), *63rd Appita Annual Conference and Exhibition*, APPITA, Melbourne, Australia, 2009, pp. 273-280.
4. D. Kannangara, **M.S. Khan**, W. Shen, “An Analysis of Effects of Internal and Surface Sizing on Ink Jet Printing Quality”, in: R. Coghill (Ed.), *63rd Appita Annual Confrence and Exhibition*, Melbourne, Australia, 2009, pp. 195-200.
5. **M.S. Khan**, W. Shen, G. Garnier, “Stability and Reactivity of Enzymatic Papers”, *2009 AIChE Annual Meeting*, Nashville, TN, pp. 190a.
6. 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.

***Journal Manuscripts in Preparation:***

1. **M.S. Khan** and T.G.M. van de Ven, “Detection and Filtration of ‘T7 Bacteriophages’ using Antibody Active Cellulose Beads”, Manuscript in preparation for **Biomacromolecules***.*
2. **M.S. Khan**, M.A. Whitehead, T.G. van de Ven, “Theoretical and Experimental Development of Antibody Active Filters to Deactivate and Filter Picloram”, Manuscript in preparation for **Biomacromolecules**.
3. **M.S. Khan**, M.A. Whitehead, T.G. van de Ven, “Molecular Calculation of Antigen-Antibody Interactions using Antibody-Antigen Docking”, Manuscript in preparation for ***Chemistry & Biology***.
4. **M.S. Khan**, M.A. Whitehead, T.G.M. van de Ven, “Quantum Molecular Modelling of Antibody Building Blocks: Amino Acids”, Manuscript in preparation for ***PROTEINS: Structure, Function, and Bioinformatics****.*
5. **M.S. Khan**, S., Haniffa, A. Slater, and G. Garnier “Effect of Paper Structure and Composition on the Bioactivity of Enzymatic Papers”, Manuscript in preparation for ***BioResources***.
6. **M.S. Khan** and G. Garnier “Novel Image Analysis Technique to Measure Enzymatic Activity and Stability on Paper Surfaces”, Manuscript in preparation for ***Advances in Image Analysis Research,*** Nova Publication, NY USA.

Major Conference, Workshop and Public Lectures:

1. ***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.

1. ***Detection and Deactivation of T7 Bacteriophages using Antibody Conjugated Beads.***

CSACS ECO Grant Winner Lecture, CSACS Annual Meeting, May 2013.

1. ***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.

1. ***Blood Typing Using Chromatographic Separation on Antibody Treated Paper.***

International Conference on Chemical Engineering (ICChE) 2011, Dhaka, Bangladesh.

1. ***3D Molecular Simulation of Antigen-Antibody Interaction*.**

The 85th Colloids and Surface Science Symposium, Montreal, Canada, 2011.

1. ***Semi-empirical Molecular Modelling of Picloram Specific Antibody*.**

The 11th Annual CERMM Symposium, Montreal, Canada, 2011.

1. ***Molecular Modelling of Antigen-Antibody Interaction using the PM3 Semi-Empirical Method*.**

Fundamental and Applied Pulp and Paper Modelling Symposium (FAPPMS) 2011, Montreal, Canada.

1. ***Managing Pollution from Small and Medium Scale Industries in Bangladesh*.**

Sigma Xi Young Researcher Lecture, 2011, Sigma Xi Montreal Chapter, Montreal, Canada.

1. ***Stability and Reactivity of Enzymatic Papers*.**

2009 AIChE Annual Meeting, Nashville, TN, USA.

1. ***Thermal Stability of Horseradish Peroxidase Enzymatic Papers*.**

63rd Appita Annual Conference and Exhibition, 2009, APPITA, Melbourne, Australia.

1. ***An Analysis of Effects of Internal and Surface Sizing on Ink Jet Printing Quality*.**

63rd Appita Annual Conference and Exhibition, 2009, APPITA, Melbourne, Australia.

1. ***Printing Biomoelcules Part-1: Achieving Total Control of Biomolecule Delivery Using Ink Jet Printing*.**

Chemeca 2008, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW.

1. ***Ink Jet Printing of Biomolecules on Porous Surfaces*.**

International Conference on Chemical Engineering (ICChE) 2008. Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh.

1. ***The Inertial Effects on the Capillary Flow in Surface Grooves*.**

Chemeca 2008, Engineers Australia, IChemE in Australia, City Hall, Newcastle, NSW, Australia.

1. ***Mechanism of Non-Coalescence for Liquid Droplets at the Air-Liquid Interface*.**

Chemeca 2007, Engineers Australia, Melbourne, Australia.

1. ***Introductory of Effluent Treatment Plant (ETP) Network*.**

Workshop on Supporting Improved Effluent Treatment in the Textile Sector in Bangladesh, BRACK INN, Dhaka, Bangladesh, 2005

1. ***Pollution Project: Investment Support to MACH*.**

*DUTCH Club, Dhaka, Bangladesh, 2005.*

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