

Curriculum Vitae

- **Full name and title:** Md Monwar HOSSAIN and Dr. (title)
- **Present work and e-mail addresses and telephone numbers:** Department of Chemical & Petroleum Engineering, United Arab Emirates (UAE) University, P O Box 15551, Al Ain, UAE,
- E-mail: mmonwar@uaeu.ac.ae. Telephone No.: (UAE): +971-3-7135315 (W)+971-3-7678322 (H)
- **Citizenship:** New Zealand
- **Country of permanent residence:** Australia
- **Australian Residential address:** 5 Dion Court, Narre Warren, Vic. 3805, Australia
- **Academic and professional qualifications:** BSc. Eng. (Chemical) from the University of Engineering & Technology, Bangladesh, MEngSci (Research) & PhD in Chemical Engineering, University of Queensland, Brisbane, Australia
- **Present appointment and notice required:** Associate Professor, Department of Chemical & Petroleum Engineering, UAE University. Seven months notice will be required.
- **Previous appointments:**
 - 2003 – 2007** Dept. of Chemical & Materials Engineering, University of Auckland, New Zealand.
 - 1998- 2002** Senior Research Scientist, Industrial Research Limited, Lower Hutt, New Zealand.
 - 1994-1998** Research Scientist, Industrial Research Limited, Lower Hutt, New Zealand.
 - 1990-1992** Australian Research Fellow, University of Queensland, Brisbane, Australia.
 - 1988-1989** Research Fellow, Massey University, Palmerston North, New Zealand.

• Details of research experience and fields of special interest

(A) Supervision of postgraduate students:

A total of **17 postgraduate students** have been supervised and all of them successfully completed their degrees: 2 post-doctorates, 3 PhD (1 as principal supervisor) and 12 Master of Engineering

(a) At the University of Auckland (2003- 2009), New Zealand:

- (1) Bei Bei Li (MS – 2004). Thesis title: Extraction of Phenolics from Citrus Peels
- (2) Hiam Abbas (MS– 2004). Thesis title: Milkfat Fractionation Using Membrane.
- (3) Nawal K. (MS- 2005). Thesis title: Precipitation of Food Proteins Using Carbon Dioxide
- (4) Jingdong Ann (PhD, 2005 to 2009). Title of the thesis: Enzyme Immobilization on Woollen Textiles and its Performance in Stain Removal.
- (5) Swallow, Wei (MS, 2006). Title of the thesis: Separation of Sugar from fruit juice.
- (6) Gary, W. (MS, 2006). Title of thesis: Extraction of gluconic acid.
- (7) Hui-Ian (MS, 2007/2008). Title of thesis: Encapsulation of Galactosidase with Carrageenan by Emulsion method with a Static Mixer.

(b) At the Industrial Research Limited, New Zealand (1994-2002):

- (1) Andrea Scafer (ME), (2) Christophe Clemente (ME), (3) Chiew Wong
- (4) Paul Ma (ME) (5) Dr. D. Watt (6) Hutam Sabti (ME) & (7) Tregan Ru (ME).

(c) At the ChE Department, University of Queensland, Australia (1989 – 1992),

- (1) Dr Rolf Scharer, (2) Mr S Hu, (PhD) (3) Mr T S Nguyen (PhD) and (4) Miss S Penjit (ME).

In addition to the above I have supervised 23 (**twenty three**) students at the undergraduate levels.

(B) International Research Collaboration:

- Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences, Beijing, China.
- King Abdul Aziz University, Kingdom of Saudi Arabia (2011-2014) .

(C) Current and Future Research Interests**(a) Separation of Bioactive Molecules from Food/Dairy Sources (Food & Bioprocessing)**

1. Recovery of bioactive compounds such as amino acids and peptides using solvents from sustainable source and with “environmentally-friendly” behavior
2. Modeling and analysis of adsorption of proteins and enzymes
3. Extraction of polyphenolics by enzyme-assisted extraction (Clean method).
4. Nanofiltration of sugars from fruit juice extracts.
5. Ultrafiltration of organic acids from aqueous media.
6. Extraction of antibiotics and steroids from fermentation media.

(b) Water and Wastewater Treatment /Chemical/Environmental Engineering

1. Separation of inorganic ions (metals, boron etc.) from wastewaters/ground water.
2. Removal of Carbon dioxide and sweetening of Natural gas
3. Removal of organics (phenols, toluene) from refinery wastewaters.

• Records of Research Grant:**(a) Funding from the Industry/Institutes**

1. Immobilization of enzymes on wools - achieved funding of \$75,000.00 (2005 to 2009) from Canesis (NZ Wool Research Organization of New Zealand) and FForST, New Zealand.
2. Recovery of Polyphenolics using Nanofiltration – funding of \$30,000.00 (2006-2009) from the HortResearch and the Food Research Institute of New Zealand Limited.
3. Dairy hydrolysate process: Feasibility study \$45,000.00 (1996-99) from NZ Dairy Board.

(b) Funding from the Foundation of Research, Science & Technology (FoRST, New Zealand) (1995-2002)

1. Development of reactive extraction for the separation of amino acids and peptides
2. Adsorbing colloid flotation for separation of metal ions

(c) Funding from the Auckland University (2003-2007)

1. Separation of lactic acid from its mixture with lactose by Nanofiltration membranes.
2. Extraction of antibiotics and pharmaceutical products by using reactive extraction processes.

(d) Funding from the UAE University & Emirates Foundation (2008-2014)

1. Removal of metals from refinery wastewaters and ground waters of Al Ain (2008-2011)
2. Bioactive Peptides from camel milk for the treatment of Diabetes mellitus (2010-2014).
3. Desalination of seawater using ammonia and carbon di-oxide (2012-2014)

• Details of teaching experience:

(A) Lecturing the following subjects (2007 to date) at the Department of Chemical & Petroleum Engineering, UAE University, Al Ain, UAE:

(1) Engineering Thermodynamics (Faculty course)

- (2) **Postgraduate course in Biochemical Engineering**
- (3) **Reactor Design**
- (4) **Water Desalination**
- (5) **Process Control**
- (6) **Biochemical separations**
- (7) **Industrial Wastewater Treatment**
- (8) **Renewable Energy Sources and Technologies**
- (9) **Transport Phenomena**

(B) Lectured the following courses at the Department of Chemical & Materials Engineering, University of Auckland, New Zealand (2003-2007):

- (1) **Introduction to Process Engineering: (Lecturer)**
- (2) **Engineering Biotechnology: Lecturer & Coordinator**
- (3) **Food Process Engineering: Lecturer & Coordinator**
- (4) **Transfer processes 2: Mass Transfer Operations: Lecturer**

(C) Lectured the following subjects at the Department of Chemical Engineering, University of Queensland, Australia

- (1) **Transport Processes**
- (2) **Mathematical Methods in Chemical Engineering**

- **Details of experience in academic planning and governance**

-Over the last ten years I have been teaching **Chemical/Biochemical, Food Processing and Environmental Engineering** related subjects at the University of Auckland and at the UAE University. I have not only taught them I have coordinated a few of them between the academics of various departments. This opportunity gave me to develop the experience of academic planning. I also had the opportunity of scheduling the laboratory for undergraduate students at the University of Auckland. The skills learned in developing the new courses for the faculty, the knowledge gathered in the continued teaching over the last many years demonstrate my capacity to provide academic leadership in those areas of Engineering. This is further reflected in the development of **new courses in Biochemical Engineering and Environmental Engineering during last 4 years (1) A Biotechnology course suitable for Biotechnology, Food Science, Chemical Engineering students, (2) Biochemical Separations and (3) Industrial Wastewater treatment**. These courses are being developed to offer a **Minor degree either in Environmental Engineering or Biotechnology**.

The excellence in teaching is evident in the gradual involvement in more and more courses. The teaching evaluations in last few years are very good and in many subjects the scores are above the average of the department and faculty. In all the lectures I try to use a combination of techniques available in the department: power point presentation, overhead camera, black/white board. The aims of teaching are outcome-oriented and include development of:

- A comprehensive knowledge of the fundamental scientific principles of the subject (e.g. Chemical/Biochemical/Food Process Engineering) and of the conventional and potential practical applications of the material.
- The ability to understand specific examples of commercial application and be able to apply the new knowledge to design and analyse similar processes in general.

- Sensitivity to the issues of technical nature (material and process considerations), impact on environment and ethical issues.
- The ability to review journal articles (especially for postgraduate students), compare with the traditional processes and being able to determine new applications.
- The ability to demonstrate the acquired knowledge in laboratory experiments.
- Attitude towards the profession, team work requirements and appreciation of skills.

- **Other relevant experience**

- (A) **As an external examiner of postgraduate students:**

- (a) For the University of Auckland, Auckland, New Zealand:

- Nadem, O., **Preparation of Activated Carbon from Spent Tyres** (2000)
 - Makardij, A. A., **Impact of Operating Parameters on Flux Decline in Microfiltration and Ultrafiltration** (2002).
 - Ghani, A. A. **Computational Fluid Dynamic Calculations for Food Processing Applications** (2003).

- (b) For the University of Malaya, Malaysia

- Marwan, A , **Analysis of Bio-diesel Production using an Enzymatic Process in a Hollow-fibre Module** (2006)

- (c) For Monash University, Melbourne, Australia

- Duo, Wu, **A novel micro-fluidic-jet-spray-dryer equipped with a micro-fluidic-aerosol-nozzle: equipment development and applications in making functional particles (PhD thesis 2010)**

- (d) For RMIT University, Melbourne, Australia

- (i) Maryam, R., **Biodegradation of Clay-based Polyethylene Nanocomposites (PhD thesis 2012)**

- (ii) Chongguang Yu., **Solid-liquid Mass Transfer in Agitated Dissolution System with High Slurry Concentration (ME thesis, 2014)**

- (B) **As invited lecturer at the professional conferences:**

- (1) Invited speaker at the Chinese Antibiotics Conference, Shanghai, China, 2004

- (Published as a full paper in Chinese Journal of Antibiotics, 1-15 (2005) and presented the talk as a Foreign Expert from the State Administration of Foreign Experts Affairs, P. R. China, at the Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences, Beijing, 2005.

- (2) Invited speaker at the World Congress on Biotechnology, Chinese Antibiotics Conference, Shanghai, China, 2008 (from UAE University)

- (C) **Honours/distinctions/membership of institutions, committees/ scholarships:**

- 2013- Awarded for “Best Paper” at the International Conference in Chemical, Biological and Environmental Sciences (ICCBES’ 13), Singapore.

- 2012- Invited to organize a mini symposium for the World Congress on Advances in Membrane Water Treatment (AMWT12), Seoul, Korea.

- 2011- Listed in the fifth edition of Great Minds of the 21st Century, Publication of the American Bibliographical Institute, USA.

- 2010- Awarded International President’s Award for Iconic Achievement in 2010 from the

International Biographical Centre, Cambridge, England.

2009- Reported as a talk entitled “Sunflower Oil instead of Kerosene” by Hellmuth Norwig in a Radio Program on Science in German Radio, December, 2009.

2009- Reported in the News paper as “Sunflower oil good for environment”, page 2, June 5, 2009.

2006- Reported in Institute of Chemical Engineers, London, as an item Process News entitled “Vegetable oil is alternative solvent”, page 18, May, 2006.

2006- Guest Editor for the Journal: Chemical Engineering & Processing in 2006.

1999- Chairperson in the Food & Bioproducts Session of Chemeca’99 at Newcastle, Australia.

1998- Highlighted in the “Membrane & Separation Technology News”, Vol. 16(10), June 1998, a monthly publication of the Business Communications Co., Norwak, CT 06855-1781, USA.

1998- Awarded for “Best Chemical Engineering Paper” from the IPENZ in 1998.

1991- 2014 Peer Reviewer for the Separation Science & Technology, Separation & Purification Technology, J. Chemical Technology & Biotechnology, Industrial Engineering Research.

1996- Cited in the “Industrial Bioprocessing”, Vol. 18 (6), June 1996, a monthly intelligent service from Technical Insights, Inc., NJ 07631-2807, USA.

Recipient of Colombo Plan Scholarship and University of Queensland Scholarship 1981-1987.

Associate Member of the IChemE, England

- **Published works**

Google Scholar Citations: 965

h-index: 16

i10-index: 29

(A) Book chapters and books (edited)

1. Hossain, Md. M. (2012). “Developments in the Separation and Recovery of Penicillin G using Hollow-fiber Membrane Contactors”, Chapter 2, pages 59 -96, in Penicillin: Biosynthesis, Application and Adverse Effects, G. Barresi and P. Komulainen, Eds, NOVA Science Publishers, Inc., New York, USA.
2. Hossain, Md M. (2011). “Mass transfer Investigation of Organic Acid Extraction with Trioctylamine and Aliquat 336 Dissolved in Various Solvents”, Chapter 17, in Mass Transfer in Multiphase Systems and Applications, Mohamed El-Amin (ed.), ISBN 978-953-307-215-9, Intech Open Access Publisher, Croatia.
3. Hossain, Md M. (2011) Subject Editor of a book on “Heat and Mass Transfer –Modeling and Simulation”, ISBN 978-953-307-604-1, InTech Open Access Publisher, Croatia.

(B) List of Publications in International Journals:

146. Jing Dong An, Patterson, D. A., McNeil, S. and Md M Hossain* (2014). “Immobilization of Lipase on Woolen Fabrics: Enhanced Effectiveness in Oil Stain removal”, Biotech. Prog. (in press).
145. Hossain, Md. M.* (2014). “Environmentally-friendly Liquid Membrane System for the Extraction of Ammonium Ions from Aqueous Solutions using Hollow-fibre Membrane Contactor”, submitted to Chem Eng. J.
144. W. Al Hashemi, W., Maraqa*, M. A., Rao, M. V., and Hossain, Md M. (2014). “Characterization and removal of phenolic compounds from condensate-oil refinery wastewater Desalination and Water Treatment, published online, DOI:10.1080/19443994.2014.884472.

143. Chaalal, O. and Hossain, Md. M.* (2014). "A Combined Process for Natural Gas Sweetening and Water Desalination" *Environmental Progress and Sustainability* (under review).
142. Hossain, Md. M. (2013). "Treatment of Ground waters in a Hollow-fibre Membrane Contactor for Removal of ions", *Membrane Water treatment, An International Journal*, 4(2), 95-108.
141. Hossain, Md. M. (2013). "Effect of Solvent type on Removal and recovery of Hexavalent Chromium from Industrial Wastewaters", *Desalination and Water Treatment*, 1-12.
140. Hui Ian Tan, Hossain, Md M.* and Lu Zhang+ (2012). "Enzyme Encapsulation by Static Mixer Method for Hydrolysis of Lactose", *Intl. J. Biotechnol. Wellness Ind.*, 1, 210-221.
139. Hossain, Md. M.* (2011), Rothman, K. Jiang, W. and Chenghang, S. "Membrane Extraction of a New Antibiotic (Shengjimycin): Equilibrium and Mass transfer Analysis", *J. Chem Tech Biotechnol.*, 86, 1247-1255.
138. Hossain, Md. M. (2010). "Extraction of Penicillin G from a Synthetic Fermentation Media using Sunflower Oil", *Intl. J. Chem. Reactor Eng.*, 10, 1-16.
137. Wei, D. S., Hossain, Md. M.* and Z. S. Saleh (2010). "Concentration of Rutin and Separation of Sugar from Fruitjuice Extract by Ultrafiltration ", *Int. J. Mol. Sci.*, 11, 672-690.
136. Hossain, Md. M.* & Dean, J. L. (2008). "Extraction of Penicillin G from aqueous solutions: Analysis of Reaction Equilibrium and Mass transfer", *Sep. Purific. Technol.*, 62(2), 437-443.
135. Harington, T. and Md M Hossain* (2008). "Extraction of Lactic Acid into Sunflower Oil and its Recovery in to an Aqueous Solution", *Desalination*, 218, 287-296.
134. Lowe, J. & Md M Hossain* (2008). "Application of Ultrafiltration Membranes for Removal of Humic acid from Drinking Water", *Desalination*, 218, 343-354.
133. Wei, D. S., Hossain, Md. M.* and Z. S. Saleh (2008). "Separation of Polyphenolics and Sugar by Ultrafiltration: Effects of Operating Conditions on Fouling and Diafiltration", *Intl. J. Chem. Biomol. Engin.*, 1(1), 10-17.
132. Hossain, Md M.* & Maisuria, J. L. (2008). "Effects of the Organic phase, Fermentation media and Operating conditions on Lactic acid Extraction", *Biotechnol. Prog.*, 24(3), 757-765.
131. Smith, E. & Hossain, Md. M.* (2007). "Extraction and Recovery of Penicillin G in a hollow-fiber Membrane Contactor: Effect of pH and Temperature", *Asia Pacific J. Chem. Eng.*, 2(5), 455-459.
130. Maisuria, J. L., & Hossain, Md M. (2007).* "Equilibrium studies of the Extraction and Re-extraction of Lactic Acid", *J. Chem. Eng. Data*, 52 (3), 665-670.
129. Chan, N. Y. Md M Hossain* & M. S. Brooks (2007). "A Preliminary Study of Protein Recovery from Mussel Blanching Water by Foaming", *Chem. Eng. Process.* 46, 501-504.
128. Chollangi, A. & Md M Hossain* (2007). "Separation of Proteins and Lactose from Dairy Wastewater", *Chem. Eng. Process.* 46, 398-404.
127. Chollangi, A. & Md M Hossain* (2007). "Fractionation of Dairy Wastewater into a Protein-rich and a Lactose-rich Product", *Asia Pacific J Chem Eng.*, 2(5), 460-465.
126. Abbas, H. Hossain, Md. M.*, & Chen, X. D. (2007) "Modelling of Anhydrous Milkfat Fractionation in an Ultrafiltration Membrane", *Chem. Eng. Proc.* 393 - 397.
125. Nawal, K., Md. M. Hossain* & Farid, Md. (2007). "Application of High-pressure Carbon di-oxide for Protein Precipitation", *J. Food Engineering.* 79, 1214 - 1220.
124. Bansal, B., Mahajan, R., Hossain, M. M. & Liaw, M. S. (2006). 'Application of a Liquid Membrane to Recover Cadmium'. *Dev. Chem. Eng. Mineral Process.* 14, 1-12.
123. Abbas, H. Hossain, Md. M.*, Chen, X. D. (2006) "A Laboratory Study of the Anhydrous Milkfat Fractionation Using a Membrane Technique", *Sep. Purific. Technol.*, 48, 167 - 175.
122. Li, Bei, Bei, B. Smith & Hossain, Md. M.* (2006). "Extraction of phenolics from citrus

- peels. II. Enzyme-assisted extraction method”, *Sep. Purific. Technol.*, 48(2), 189-196.
121. Li, Bei, B. Smith & Hossain, Md. M.* (2006). “Extraction of phenolics from citrus peels.I. Solvent extraction method”, *Sep. Purific. Technol.*, 48(2), 182 - 188.
120. Hossain, Md. M. (2005). “Reactive Extraction of Amino acids and Dipeptides using an Extra-flow Hollow-Fibre Module”, *Sep. Purific. Technol.*, 42, 227-236.
119. Hossain, Md. M.* and Tregan, Ru (2005). “Hollow-Fibre Membrane Technology for Removal and Recovery of Chromium from Wastewaters”, *Integrated Concepts in Water Recycling*, Eds, S.J. Khan, A. I. Schafer, M. H. Muston, 289-298.
118. Bansal, B., Dong, X. D. & Hossain, Md. M.* (2005). “Modelling of Lithium Transport through a Liquid Membrane of TOPO and LIX54 in Kerosene”, *Chem. Eng. Proc.*, 44, 1327-1336.
117. Hossain, Md. M. (2005). “Reactive Extraction of Biomolecules using Membrane Modules”, *Chinese J of Antibiotics*, 1-14.
116. Hossain, Md. M. (2005). “Membrane Processing of Echinacea purpurea Herb Juice Extract”, *Dev. Chem. Eng. Mineral Process*, 13 (1/2), 71-78.
115. Hossain, Md M (2003). “Concentration of Natural Pigments in Black Currant Pomace by a Single Ultrafiltration Method”, *Food Australia*, 55(1), 14.
114. Hossain, Md M. (2002). “Extraction of Amino-sugars, Amino Acids and dipeptides by Liquid Membrane Technology”, *Food Australia*, 54 (10), 463.
113. Sabti, H., Hossain, Md. M.*, Brooks, R. R. & Stewart, R. B. (2002). “Removal of Heavy Metals from Polluted Waters of Base Metal Mining ”, *Environ. Progress*, 21(1), 63-69.
112. Hossain, Md. M.* & Tregan, Ru (2002). “Distribution of Chromium (VI) in various Organic Solutions during Extraction and Re-extraction”, *J. Chem. Eng. Data*, 47(2), 203 - 208.
111. Hossain, Md. M.* & Z. Saleh (2001). “Concentration of a-Lactalbumin in Whey Permeate Solution by a Semi-batch Foaming Process”, *Austral. Biotechnol.*, 11(2), 29-31.
110. Chiew, H Wong, Hossain Md M* & Davies, C E (2001). “Performance of a Continuous Foam Column as a function of Process Variables”, *Bioprocess Biosystem Eng.*, 24, 73-81.
109. Saleh, Z. & Md. M. Hossain* (2001). “Separation of Proteins from Multicomponent Mixtures by a Batch Foaming Process”, *Chem. Eng. & Proc.*, 40, 371-378.
108. Ma, P., Hossain, Md. M.* & Chen, D. X. (2000). “Kinetics of Lithium Transport through a Liquid Membrane Containing TOPO and LIX54”, *Sep. Sci. Technol.*, 35, 2513.
107. Hossain, Md. M. (2000). “Mass Transfer Studies of Amino acids and Dipeptides through AOT-Oleyl Alcohol Membrane in a Hollow-Fibre Module”, *Sep. Purific. Technol.*, 18, 71.
106. Sabti, H., Hossain, Md. M., Brooks, R. R.* & Stewart, R. B. (2000). “The Environmental Impact of Base Metal Mining at the Tui Mine”, *J. Royal Society of New Zealand*, 30, 197.
105. Hossain, Md. M. & Fenton, G. (1999). “Extraction and Partition Characteristics of Amino acids and Dipeptides in some Organic Solutions”, *J. Chem. Eng. Data*, 44, 1279.
104. Hossain, Md. M. & Fenton, G. (1998). “Application of Foam Separation Processes for Protein Extraction/Stripping”, *Austral. Biotechnol.*, 8(5), 289.
103. Hossain, Md. M. & Fenton, G. (1998). “Foam Separation of Proteins from Aqueous Solutions”, *Sep. Sci. Technol.*, 33(11), 1703.
102. Clemente, C. and Hossain, Md M. (1997). “Stability of Supported Liquid Membrane for Debittering of Casein Hydrolysate”, *Sep. Sci. Technol.*, 32(16), 2685.
101. Lawson, F., Beaglehole, D., Harper, G. & Hossain, Md M. (1997). “Tryptophan, BSA and Tryptophan-Leucine an Oil-Water Interface”, *J. Colloid Interface Sci.*, 192, 266.
100. Schaefer, A. & Hossain, Md. M. (1996). "Extraction of Organic Acids from Kiwifruit Juice using a Supported Liquid Membrane Process". *Bioprocess Eng. J.*, 16, 25.

99. Hossain, Md. M. & Stanley, R.A. (1996). "Selective Removal of Hydrophobic Peptides from Protein Hydrolysates using a Supported Liquid Membrane". *Sep. Sci. Technol.*, 31(10), 1443.
98. Hossain, Md. M. & Do, D.D. (1996). "Displacement Chromatography of a Binary Mixture of Proteins - Aggregation of Protein". *Isolation and Purification*, 2, 149.
97. Hossain, Md. M. & Do, D.D. (1996). "Displacement Chromatography of a Mixture of a Protein and an Impurity - Denaturation of Protein". *Isolation & Purification*, 7, 1-16.
96. Hossain, Md. M. (1995). "A Simple Method of Freezing Time Calculation of Foodstuffs with Various Shapes". *Food Australia*, 47, 109.
95. Hossain, Md. M. & Stanley, R. A. (1995). "Selective transport of a peptide from its Mixture with an Amino Acid using a Supported Liquid Membrane". *Sep. Sci. Technol.*, 30 (20), 3801.
94. Schaefer, A. & Hossain, Md. M. (1995). "Applications of Liquid Membrane Process for the Separation and Production of Organic Acids from Fruit Juice". *Food Australia*, 48(2), 75.
93. Nguyen, T., Hossain, Md. M. & Do, D.D. (1994). "Interference Phenomena and Non-ideal Effects of Displacement Chromatography - Experimental Verification". *Isolation and Purification*, 2, 27.
92. Sangsurasak, P., Mitchell, D.A. & Hossain, Md. M. (1993). "Transient Two Dimensional Heat Conduction by Orthogonal Collocation Technique". *International Communication in Heat & Mass Transfer*, 20, 557.
91. Hossain, Md. M. & Do, D.D. (1992). "The Effects of Denaturation in the Displacement Chromatographic Behaviour of Proteins". *Chem. Eng. J.*, 49, B29 – B39.
90. Hu, S., Do, D.D. & Hossain, Md. M. (1992). "Step Elution in Non-linear Gradient Chromatography". *J. Chromatography*, 605, 175.
89. Hossain, Md. M. & Do, D.D. (1992). "Determination of Intraparticle Immobilized Enzyme Distribution under Moderate Diffusion Conditions". *Biotechnol. Bioeng.*, 40, 743.
88. Hossain, Md. M., Cleland, D.J. & Cleland, A.C. (1992). "Prediction of Freezing & Thawing Times for Foods of Regular Multi-dimensional Shape by using a Semi-analytical Geometric Factor". *Intl. J. Refrig.* 15, 227.
87. Hossain, Md. M., Cleland, D.J. & Cleland, A.C. (1992). "Prediction of Freezing & Thawing Times for Foods of Two-dimensional Irregular Shapes by using a Semi-analytical Geometric Factor". *Intl. J. Refrig.* 15, 235.
86. Hossain, Md. M., Cleland, D.J. & Cleland, A.C. (1992). "Prediction of Freezing and Thawing Times for Foods of Three-dimensional Irregular Shapes by using a Semi-analytical Geometric Factor". *Intl. J. Refrig.* 15, 241.
85. Scharer, R., Hossain, Md. M. & Do, D.D. (1992). "Determination of Total and Active Immobilized Enzyme Distribution in Porous Supports". *Biotechnol. Bioeng.*, 39, 679.
84. Hossain, Md. M. & Do, D.D. (1989). "A Complete Theory to Determine Enzyme Distribution and Rate Constants of Immobilized Enzyme". *Biotechnol. Bioeng.* 33, 963.
83. Hossain, Md. M. & Do, D.D. (1988). "Determination of Intrinsic Parameters for Immobilization Reactions of Catalase and Amyloglucosidase in Porous Glass Supports", *Biotechnol. Bioeng.*, 31, 730.
82. Do, D.D. & Hossain, Md. M. (1987). "A New Method to Determine Enzyme Distribution Effective Diffusivity, Rate Constant for the Reactions", *Biotechnol. Bioeng.*, 29, 545.
81. Hossain, Md. M. & Do, D.D. (1987). "Effects of Nonuniform Distribution of Immobilized Enzyme concentrations in Support Pellet on the Performance of Continuous Stirred Basket Reactor (CSBR)", *Chem. Eng. J.*, 34, B35.
80. Do, D.D., & Hossain, Md. M. (1986). "A Novel Method of Determination of the Internal

- Enzyme Distribution and the Deactivation Rate Constant", *Biotechnol. Bioeng.*, 28, 486.
79. Hossain, Md. M., Do, D.D. & Bailey, J.E. (1986). "Immobilization of Enzymes in Porous Solids under Restricted Diffusion Condition". *AIChE Journal*, 32, 1088.
 78. Hossain, Md. M. & Do, D.D. (1985). "Immobilization of Multi-Enzyme in Porous Solid Supports. 1. Theoretical Study", *Chem. Eng. Sci.*, 42, 255.
 77. Hossain, Md. M. & Do, D.D. (1985). "Fundamental Studies of Glucose Oxidase Immobilization on Controlled Pore Glass". *Biotechnol. Bioeng.*, 27, 542.
 76. Hossain, Md. M. & Do, D.D. (1985). "Modelling of Enzyme Immobilization in Porous Membranes". *Biotechnol. Bioeng.*, 27, 110.

(C) Papers at the International (Refereed) Conferences

75. Zaman, J. & Hossain, Md. M.. "Simulation of a Quench Converter for Ammonia Synthesis". Summer Computer Simulation Conference, Washington, USA, (1981).
74. Do, D.D., Bailey, J.E., Hossain, Md. M. & Clark, D.S. "Restricted Diffusion Effects on Enzyme Immobilization in Porous Supports", *AIChE Conference*, LA, USA, (1982).
73. Do, D.D., Bailey, J.E., Hossain, Md. M. & Clark, D.S. "Modelling of Enzyme Immobilization". 5th Australian Biotechnology Conference, Sydney, Australia, (1982).
72. Hossain, Md. M. & Do, D.D. "Enzyme Immobilization in Porous Solids". Sixth Australian Biotechnology Conference, Brisbane, Australia, (1984).
71. Hossain, Md. M., Cleland, D.J. & Cleland, A.C. "A Geometric Factor Method to Calculate Freezing and Thawing for Two-dimensional Irregular Objects". 4th Australasian Conference on Heat and Mass Transfer, Christchurch, New Zealand, (1989).
70. Hossain, Md. M. & Do, D.D. "The Effects of Protein Denaturation in the Displacement Chromatographic Behaviour of Proteins". 9th Aust. Biotech. Conf., Australia, (1990).
69. Hossain, Md. M. & Stanley, R.A. "Transport of a Peptide from a Mixture with an Amino acid using a Liquid Membrane". 4th Pacific Rim Biotech. Conf., Australia, (1995).
68. Hossain, Md. M. & Stanley, R.A. "A Liquid Membrane Process for Removal of Peptides from Casein Hydrolysate". *Chemeca'95*, Adelaide, Australia, (1995).
67. Schäfer, A. & Hossain, Md. M. "Membrane Extraction of Organic Acids: Single and Binary Systems". *EuroMembrane 95*, University of Bath, UK.
66. Hossain, Md. M. & Stanley, R. A. "Liquid Membrane Processes for Biochemical Application"- an invited paper to the 1995 Intl. Chem. Congress, Hawaii, USA.
65. Hossain, Md M. (1996). "Extraction of Amino acids and Peptides with a Hollow-Fiber Supported Liquid Membrane Contactor", (ICOM '96), Yokohama, Japan.
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