

ZAFAR IQBAL

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SUMMARY

Analytical professional with extensive laboratory and management skills. Expertise in food science, food safety, quality control, GMPs, product development, and team collaboration. Knowledgeable in Canadian federal, provincial, and municipal food safety regulations. Strong interpersonal and problem-solving skills honed in dynamic environments. An effective communicator with a proven track record in publishing articles and reviewing grant proposals.

EDUCATION

- **Doctor of Science (Food Science & Technology)**

University of Natural Resources & Applied Life Sciences, Austria | Dec. 2006 - Mar. 2010

- Acquired North South Dialogue (NSD-OEAD) doctoral scholarship, December 2006 – March 2010 (3 years, 4 months @ €955/month), Government of Austria.

-Comprehensive analytical method development of Formose Sugar using HPLC and IC.

-Published four research articles in reputed journals.

-Courses: Protein Function, Enzyme Technology, Food Biotechnology, Carbohydrate Technology, Membrane Separation Process, Selected Topic in Food Sciences (seminar).

- **Master of Science (Food Technology)**

Bangladesh Agricultural University, Bangladesh | Jan. 1998 - Dec. 2000

-Thesis: Development of shelf-stable dried tomato products using mechanical and solar drying

-Published one research article in a reputed journal

-Deep understanding of QC, GMPs, and HACCP

-Courses: Food Science; Food Microbiology; Food Biotechnology; Food Process Laboratory; Technology of Food Products; Technology of Plant Products; Technology of Cereal Products; Technology of Animal Products; Food Engineering, Sugar Engineering and Technology, Dairy Engineering, Food Plant Design and Management.

- **Bachelor of Science (Agricultural Engineering)**

Bangladesh Agricultural University, Bangladesh | Jan. 1992 - Dec. 1995

-Thesis: Investigation on strength properties of bamboo splits

-Published two research articles in reputed journals

-Courses: Physics, Chemistry, Mathematics, and various Food Technology courses like Fundamentals of Food Engineering, Food Plant Engineering, Food Process Engineering and Quality Control, Refrigeration Air Conditioning and Process Engineering etc.

SKILLS AND ABILITIES

- **Management Skills**

- Supervised students in labs, resolved conflict situations, maintained equipment, work schedules, and coordinated training
- Assisted site officers and supervisors at Bengal Biscuits Limited
- Effective team player and resourceful problem solver

- **Communication Skills**

- Effectively communicated in international labs and industrial settings
- Taught food science courses and provided assistance at Bengal Biscuits Limited
- Instructed students in the lab settings, presented lab works and results

- **Laboratory Skills**

- Analytical method development, chromatography, spectroscopy, microbiological techniques
- Nanoparticle synthesis and characterization, deep understanding of QC, GMPs, and HACCP
- Experienced in operation and maintenance of high temperature fryers, dryers, furnace etc.
- Working with standard chemical laboratory procedures, sampling procedures & techniques

- **Computer Skills**

- Proficient in Python, LabVIEW, Canva, Microsoft Office and Google applications

PROFESSIONAL EXPERIENCE

- **CEO/Founder**, Iqbal Consulting Services

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- **Expert Reviewer** (remote, occasional)

- Ontario Centre of Innovation (OCI), Ontario, Canada | Feb. 2014 - Present
- Evaluating funding applications, gaining insights into Food Science R&D projects
 - Contributing to Ontario's innovation ecosystem through grant proposal reviews

- **Research Associate**

Carleton University, Ottawa, ON, Canada | Aug. 2010 - May 2016

- Synthesized and characterized nanoparticles
- Conducted bacterial culture, characterization and analysis
- Several articles published in reputed journals
- Contributed to the development of the following international research proposals:
 1. Best-in-Science Program 2013-2014 call for Letter of Intent. Proposal title: 'Development of accurate analysis methods for trace pharmaceuticals and metabolites in water'.
 2. CIDA - PWCB Partners for Development: Canadian Universities Proposal 2012. Proposal title: 'Bangladesh Food Security Project'.
 3. IDRC - Small Grants for Innovative Research and Knowledge-sharing Proposal 2012. Proposal title: 'Polydopamine-nanotextured antimicrobial food packaging films'.
 4. Human Frontier Science Program (HFSP) Grants 2012.

Proposal title: 'Interdisciplinary Approach to Understanding the Complex Propagation Mechanism of E. coli O157:H7 Living Cells on Antimicrobial Nanostructured Food Packaging Film Surface'.

5. NSERC Strategic Project Grant (SPG) 2011 competition.

Proposal title: 'Development of Rapid Methods using MNPs@MIPDA/MIPPy and New Generation Sequencing for Detection, Quantification and Removal of *Escherichia coli* in Environmental Waters'.

6. CIDA - Canadian International Food Security Research Fund (CIFSRF) Project concept not 2011.

Proposal title: 'Development of technologies for agricultural production, processing and marketing towards food security in Bangladesh'.

- **Technician (part-time)**

Carleton University, Ottawa, ON, Canada | June 2012 - Aug. 2012

-Assisted students, conducted lab experiments, and maintained lab instruments

- **Associate Professor**

Bangladesh Agricultural University, Bangladesh | Mar. 2010 - Nov. 2018

(Actively taught for seven months)

-Academic, research, and administrative roles

-Courses Taught:

Undergraduate (B. Sc. in Food Engineering) courses:

Course No.: 311

Course Title: Food Plant Engineering

Content:

- Food Irradiation – equipment for irradiation and related aspects
- Safety measures in Food Plant
- Physical, thermal and chemical properties of food raw materials

Course No.: 312

Course Title: Unit Operations in Food Engineering

Content:

- Freezing of fruits and vegetables
- Handling of granular material using screw conveyor
- Sieve analysis – grading of food particles

Course No.: 406

Course Title: Food Technology 1

Content:

- Analysis and evaluation of wheat flour, preparation and composition analysis of gluten
- Formulation and manufacture of various baked products e.g. breads, cakes, biscuits etc.
- Preparation of composite flour (wheat, rice and cassava flours etc.)
- Manufacture of baked products from composite flour
- Formation and preparation of various still and carbonated beverages with or without fruit juices
- Laboratory exercises/assignments on composition analysis and processing of tea, coffee and cocoa
- Processing and preservation of various spices by applying different techniques e.g. drying, powdering, paste etc.
- Production and analysis of fermented food products: beer, wine, distilled spirits, vinegar, yogurt etc.

- **Assistant Professor**

Bangladesh Agricultural University, Bangladesh | July 2005 - Feb. 2010

(Actively taught for 1 year and five months)

-Academic, research, and administrative roles

- Courses Taught:

Undergraduate (B. Sc. in Food Engineering) courses:

- Fundamentals of Food Engineering
- Food Plant Engineering
- Food Process Engineering and Quality Control

Graduate (MS in Food Technology) courses:

- Food Process Laboratory
- Technology of Food Products
- Food Engineering
- Food Plant Design and Management

- **Lecturer**

Bangladesh Agricultural University, Bangladesh | Oct. 2002 - June 2005

-Academic, research, and administrative roles

-Courses Taught:

Undergraduate (B. Sc. in Food Engineering) courses:

- Fundamentals of Food Engineering
- Food Plant Engineering
- Food Process Engineering and Quality Control

- **Technical Services Officer**

Bengal Biscuits Limited, Dhaka, Bangladesh | Feb. 2001 - May 2002

-Conducted R&D, GMPs, and HACCP, food sampling procedures and techniques implemented

-Acquired experience in food production practices including raw materials, product formulations, food additives/ingredients, quality control (QC) methods and practices

-Developed and launched 'real potato chips'. One article published in national journal

ADMINISTRATIVE EXPERIENCE

- Treasurer, Ishakha Hall, Bangladesh Agricultural University. 2004-2005
-Prepared budget, procurement lists, and conducted purchase committee meeting
- House Tutor General, Shaheed Shamsul Haque Hall, Bangladesh Agricultural University. 2005-2006
-Issued sports budget, procurement lists, administered students' dining team etc.
- Vice President, Onkur Cultural Organisation, Bangladesh Agricultural University. 2003-2004
-Conducted administrative works, meeting, and prepared procurement lists
- Member, Budget & Procurement Committee, Department of Food Technology, Bangladesh Agricultural University. 2002-2018
-Attended in departmental procurement meetings

LIST OF PUBLICATIONS

- Stephen Kirby, **Zafar Iqbal**, Edward P.C. Lai, Tyler Avis. Rapid Screening of Natural Liquid Sweeteners by Capillary Electrophoresis. *Int J Adv Res Chem Sci*, 2024, 11(1):1-17.
- Lai EPC Lai, **Iqbal Z.** Zinc Oxide and Peroxide Nanoparticles - from Chemical Synthesis to Electrochemical Analysis and Wastewater Filtration. *Nanotechnol Adv Mater Sci*, 2024, 7(1):1-18.

- Meissam, N., **Z. Iqbal**, E.P.C. Lai. CE-UV Analysis of Biochemically Active Compounds Loading onto Chitosan-coated Magnetic Nanoparticles. *Journal of Research Analytica*, 2016, 2(3):01-07.
- E. P. C. Lai, **Z. Iqbal**, S. Nour. Polymerization of Vinylpyrrolidone around Nanomaterials toward Water Purification. *Coatings*, 2014, 4:340-355; doi:10.3390/coatings4020340.
- Miah, M., **Z. Iqbal**, E. P. C. Lai. A Comparative CE-UV Binding Test Study between Polydopamine-coated and Polypyrrole-coated Magnetic Nanoparticles with Endocrine Disrupting Compounds and Pharmaceuticals in Water. *Clean - Soil, Air, Water*, 2014, 42 (9999):1-9; doi:10.1002/clen.201300210.
- **Iqbal, Z.** and E. P. C. Lai. Investigation of Polydopamine Growth on Nanomaterials in Water. *Journal of Nanomaterials and Molecular Nanotechnology*, 2013, 2:6. doi:10.4172/2324-8777.1000127.
- **Iqbal, Z.**, E. P. C. Lai and T. J. Avis. Antimicrobial Effect of Polydopamine coating on *Escherichia coli*. *Journal of Materials Chemistry*, 2012, 22: 21608-21612. doi: 10.1039/C2JM34825J.
- Miah, M., **Z. Iqbal**, E. P. C. Lai. Rapid CE-UV Evaluation of Polypyrrole-coated Magnetic Nanoparticles for Selective Binding of Endocrine Disrupting Compounds and Pharmaceuticals by Aromatic Interactions. *Analytical Methods*, 2012, 4:2866-2878. doi: 10.1039/C2AY25343G.
- Alsudir, S, **Z. Iqbal**, E. P. C. Lai. Competitive CE-UV Binding Tests for Selective Recognition of Bisphenol A by Molecularly Imprinted Polymer Particles. *Electrophoresis*, 2012, 33: 1255-1262. doi: 10.1002/elps.201100706.
- **Iqbal, Z.**, E. P. C. Lai and T. J. Avis. Development of Polymer-Modified Magnetic Nanoparticles and Quantum Dots for *Escherichia coli* Binding Test. *Microchimica Acta*, 2011, 176(1&2): 193-200.
- Alim, M. A., **Z. Iqbal**, P. C. Dutta. Studies on the distribution of fatty acids and minor components of high-erucic acid mustard oil and low-erucic acid rapeseed oil. *Emirates Journal of Food & Agriculture*. 2012, 24(4): 1-7.
- **Iqbal, Z.**, S. Alsudir, M. Miah, E. P. C. Lai. Rapid CE-UV Binding Tests of Environmentally Hazardous Compounds with Polymer-modified Magnetic Nanoparticles. *Electrophoresis*, 2011, 32(16): 2181-2187.
- **Iqbal, Z.** and S. Novalin. The Formose Reaction: A Tool to Produce Synthetic Carbohydrates within a Regenerative Life Support System. *Current Organic Chemistry*, 2012, 16(6): 769-788. doi: <http://dx.doi.org/10.2174/138527212799957968>.
- **Iqbal, Z.**, E. P. C. Lai and T. J. Avis. Development of Polymer-Modified Magnetic Nanoparticles and Quantum Dots for *Escherichia coli* Binding Test. *Microchimica Acta*, 2011, 176(1&2): 193-200.
- **Iqbal, Z.** and S. Novalin. Investigations on the formose reaction with partial formaldehyde conversion - a chance for the production of synthetic carbohydrates. *Emirates Journal of Food & Agriculture*. 2011, 23(4): 338-354.
- **Iqbal, Zafar**. A modified DNPH derivatization method in RPLC for quantification and determination of dihydroxyacetone and formic acid in formose samples. *Analytical Chemistry: An Indian Journal*, 2011, 10(10).
- **Iqbal, Z.**, S. Alsudir, M. Miah, E. P. C. Lai. Rapid CE-UV Binding Tests of Environmentally Hazardous Compounds with Polymer-modified Magnetic Nanoparticles. *Electrophoresis*, 2011, 32(16): 2181-2187.
- **Iqbal, M. Z.** and S. Novalin. Analysis of formose sugar and formaldehyde by high-performance liquid chromatography. *Journal of Chromatography A*, 2009, 1216(26): 5116-5121.
- **Iqbal, M. Z.** and M. N. Islam. Mechanical and solar dehydration of tomato. *Bangladesh Journal of Agricultural Engineering*, 2009. 20(1&2): 1-9.

- Hoque, M. A., **M. Z. Iqbal**, S. M. M. Kabir, M. B. Uddin. Effect of packaging materials on shelf life of ground coriander. *Bangladesh Journal of Agricultural Research*, 2006. 31(1): 129-138.
- Hoque, M. A., **M. Z. Iqbal**, S. M. M. Kabir, M. B. Uddin. Effect of packaging materials on shelf life of ground turmeric. *Bangladesh Journal of Progressive Science and Technology*, 2005. 3(1): 49-52.
- Alam, M. M., **M. Z. Iqbal**, M. K. Hassan, M. R. Ali, M. J. Islam. Study on pre-harvest practices on post-harvest loss of onion. *Journal of Agricultural Education and Technology*, 2005. 8(1&2): 49-52.
- Islam, M. N., M. S. Islam, M. S. Islam, **M. Z. Iqbal**. Development of shelf-stable wood apple mat and its utilization. *Bangladesh Journal of Agricultural Engineering*, 2003. 14(1&2): 75-86.
- **Iqbal, M. Z.** and K. Jahan. Effects of salt and other chemicals on colour of potato chips from cold-stored potatoes. *Bangladesh Journal of Environmental Science*, 2003. 9(1&2): 99-103.
- Jahan, I., M. Farooque, **M. Z. Iqbal**, K. Jahan. Effect of different sources of nutrients on the growth and yield of cabbage. *Bangladesh Journal of Environmental Science*, 2003. 9(1&2): 87-90.
- **Iqbal, M. Z.** and M. N. Islam. Development of shelf-stable dried tomato products by using mechanical and alginate solar drier. *Proceedings, Second Annual Paper Meet, Agricultural Engineering Division, the Institution of Engineers, Bangladesh, 20th November, 2002*: 190-200.
- Mistry, C. K., M. N. Hoque, A. K. M. R. Islam, **M. Z. Iqbal**. A study on rice husk ash and surki dust as pozzolana materials. *Progressive Agriculture*, 2001. 12(1&2): 205-211.
- Abedin, M. Z., **M. Z. Iqbal**, M. Z. Rahman. An investigation on strength properties of bamboo splits. *Bangladesh Journal of Agricultural Engineering*, 2000. 11(1&2): 49-57.

PROFESSIONAL DEVELOPMENT/TRAINING

- Laboratory Safety Training. Organized by ‘Environmental Health & Safety Division’, Carleton University (May 08, 2012)
- Workplace Hazardous Materials Information System (WHMIS) Online Training (Jun., 2011)
- Biosafety Awareness Training. Organized by ‘Environmental Health & Safety Division’, Carleton University (May 18, 2011)
- Training on Statistical methods for agricultural research. Organized by Graduate Training Institute, Bangladesh Agricultural University (May, 29 - June 10, 2004)
- Training on ‘Training of Trainers (TOT)/Instructor Skills Workshop Basic Performing Series’. Jointly organized by Olds College, Canada and Graduate Training Institute, Bangladesh Agricultural University (Feb., 22 - Mar. 6, 2003)
- Training on Scientific Report Writing. Organized by Graduate Training Institute, Bangladesh Agricultural University (Feb. 02 -07, 2002)
- Training on ‘Administration, Office Management and Communication’. Organized by Graduate Training Institute, Bangladesh Agricultural University (August 4 - 16, 1999)
- Guidance tour at various food processing industries in Dhaka, Bangladesh. Organized by Department of Food Technology and Rural Industries, Bangladesh Agricultural University (June 11 - 18, 1997)

ORAL PRESENTATIONS:

- (2013) **Z. Iqbal (presenter)** and E.P.C. Lai, 'Investigation of Polydopamine growth on Nanomaterials in Water by Capillary Electrophoresis', *59th ICASS Conference*, Mont-Tremblant, Montreal, Quebec, Canada (June 26-28, 2013). <http://www.csass.org/docs/ICASSprogram.pdf>
- (2013) E.P.C. Lai, (*invited speaker*), S. Alsudir and **Z. Iqbal**, 'Validation of a New Method for Trace Analysis of Nanomaterials in Water by Polymer Growth Before Capillary Electrophoresis', *59th ICASS Conference*, Mont-Tremblant, Montreal, Quebec, Canada (June 26-28, 2013). <http://www.csass.org/docs/ICASSprogram.pdf>
- (2012) E.P.C. Lai (*invited speaker*), **Z. Iqbal**, M. Miah and B. Ormeci, 'CE-UV characterization of new polydopamine & polypyrrole-coated magnetic nanoparticles for selective extraction of aromatic contaminants and pharmaceuticals in water treatment', *The 19th Int. Symposium on Electro & Liquid Phase-Separation Techniques ITP 2012* (<http://itp2012.okstate.edu/>), Baltimore Inner Harbor Maryland, USA (Sept., 30 - Oct. 3, 2012)
- (2011) **Z. Iqbal (presenter)**, E.P.C. Lai and T.J. Avis, 'Application of Polymer-modified Magnetic Nanoparticles for Selective Removal of Escherichia coli and Bisphenol A in Environmental waters', *57th ICASS and 3rd CCACC Conference*, Toronto, Ontario, Canada (Aug. 29-31, 2011). <http://www.etpsymposium.org>
- (2011) **Z. Iqbal (presenter)**, S. Alsudir, M. Miah and E.P.C. Lai, 'Rapid CE-UV Binding Tests of Environmentally Hazardous Compounds with Polymer-modified Magnetic Nanoparticles', paper#85, *94th Canadian Chemistry Conference*, Montreal, Quebec, Canada (June 5-9, 2011). <http://abstracts.csc2011.ca/00002216.htm>
- (2010) E.P.C. Lai (*invited speaker*), M. Pereira and **Z. Iqbal**, 'Kinetic Investigation of Fast Biomolecular Interactions with Quantum Dot Conjugates and Magnetic Particles by CE', paper#KL20, *10th Asia-Pacific Int. Symposium on Microscale Separations & Analysis*, Hong Kong (Dec. 10-13, 2010)

AFFILIATIONS

- Subject Editor, Emirates Journal of Food and Agriculture (Feb. 2024 – to date)
- Associate Editor, Journal of Food Research (Feb. 2012 – Apr. 2018)
- Reviewing Board Member, Emirates Journal of Food and Agriculture (Nov. 2011 – Dec. 2013)
- Senior Editor, Emirates Journal of Food and Agriculture (Jan. 2013 – Dec. 2015)
- Associate Editor, Emirates Journal of Food and Agriculture (Jan. 2016 – Dec. 2017)
- Editor, Journal of Food Science and Technology (Apr. 2013 - Mar. 2016)
- Member, Publication Committee, Assoc. Food Sci. Tech. India (Apr. 2013 - Mar. 2016)

REFERENCES

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