

## **ZAFAR IQBAL**

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### **SUMMARY**

Experienced analytical professional with a strong background in review, editorial work, laboratory research, and management. Expertise in food science, quality control, Good Manufacturing Practices (GMP), and product development. Demonstrated ability to lead and collaborate effectively within teams, with strong interpersonal and communication skills developed in fast-paced environments. Proven track record in publication and grant proposal reviews.

### **EDUCATION**

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

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

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

-Thesis: Investigation on Formose Reaction under Specific Consideration of Partial Conversion of Formaldehyde.

-Developed comprehensive analytical methods for Formose Sugar using HPLC and IC.

-Published four research articles in reputable journals.

-Completed courses in Structure & Functions of Proteins, Enzyme Technology, Food Biotechnology, Carbohydrate Technology, Membrane Separation Process, and 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.

-Understanding of QC, GMPs, and HACCP.

-Completed courses in 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, and more.

- **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 reputable journals.

-Completed courses in Physics, Chemistry, Mathematics, Statistics, Engineering Drawings, Computer Science, Engineering Mechanics, Thermodynamics, Engineering Materials & Cost Estimation, Fluid Mechanics, Irrigation & Drainage Engineering, Hydraulics, Groundwater Engineering, Electrical Machinery, Concrete Structure Design, Environmental Engineering, Agricultural Process Engineering, Agricultural Mechanization, Fundamentals of Food Engineering, Food Plant Engineering, Food Process Engineering & Quality Control, Refrigeration & Air Conditioning Engineering, and more.

## SKILLS AND ABILITIES

- **Management Skills**

- Supervised students in labs, maintained equipment and work schedules, and coordinated trainings.
- Assisted site officers and supervisors at Bengal Biscuits Limited.
- Demonstrated effective teamwork and resourceful problem-solving skills.

- **Communication Skills**

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

- **Laboratory Skills**

- Developed analytical methods, including capillary electrophoresis, chromatography, spectroscopy, and microbiological techniques.
- Expertise in nanoparticle synthesis and characterization, with a deep understanding of QC, GMPs, and HACCP.
- Experienced in the operation and maintenance of high temperature fryers, dryers, furnace etc.
- Proficient in standard chemical laboratory procedures, sampling procedures, and techniques.

- **Computer Skills**

- Adequate knowledge in Canva, ChemSketch, LabVIEW, LaTeX, Microsoft Office.

## PROFESSIONAL EXPERIENCE

- **CTO/Founder**

Iqbal Consulting Services | Feb. 2022 - Present  
122-837 Eastvale Drive, Ottawa, ON K1J 7T5, Canada  
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- **Expert Reviewer** (remote, occasional)

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

- **Research Associate**

Carleton University, Ottawa, ON, Canada | Aug. 2010 - May 2016  
-Synthesized, and characterized nanoparticles, and analyzed using capillary electrophoresis technique.  
-Conducted bacterial culture, characterization, and analysis.  
-Published several articles in reputable 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 laboratory 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 one 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, implemented GMPs, HACCP, and food sampling procedures and techniques.

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

-Developed and launched 'real potato chips', with one article published in a national journal.

### **ADMINISTRATIVE EXPERIENCE**

- Treasurer, Ishakha Hall, Bangladesh Agricultural University (2004-2005).  
-Prepared budgets, procurement lists, and conducted purchase committee meetings.
- House Tutor General, Shaheed Shamsul Haque Hall, Bangladesh Agricultural University (2005-2006).  
-Issued sports budgets, prepared procurement lists, and managed the students' dining team.
- Vice President, Onkur Cultural Organisation, Bangladesh Agricultural University (2003-2004).  
-Conducted administrative work, organized meetings, and prepared procurement lists.
- Member, Budget & Procurement Committee, Department of Food Technology, Bangladesh Agricultural University (2002-2018).  
-Participated 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, 20<sup>th</sup> 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', *59<sup>th</sup> 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', *59<sup>th</sup> 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', *57<sup>th</sup> ICASS and 3<sup>rd</sup> 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, *94<sup>th</sup> 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, *10<sup>th</sup> Asia-Pacific Int. Symposium on Microscale Separations & Analysis*, Hong Kong (Dec. 10-13, 2010)

## AFFILIATIONS

- Subject Editor, Innovations in Agriculture, Pensoft Publishers (April 2024 – to date)
- Subject Editor, Emirates Journal of Food and Agriculture (Feb. 2024 – to date)
- Associate Editor, Journal of Food Research (Feb. 2012 – Apr. 2018)
- 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)
- Senior Editor, Emirates Journal of Food and Agriculture (Jan. 2013 – Dec. 2015)
- Reviewing Board Member, Emirates Journal of Food and Agriculture (Nov. 2011 – Dec. 2013)

## REFERENCES

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