

ADEMOLA M. HAMMED (PhD)

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EDUCATION AND QUALIFICATIONS

PhD in Agricultural and Biosystems Engineering North Dakota State University	August, 2020
Diploma in Teaching College Sciences North Dakota State University	August, 2020
PhD in Biotechnology Engineering International Islamic University Malaysia	July, 2014
MSc in Biotechnology Engineering, International Islamic University Malaysia	Jan., 2011
B. Agric. Tech. in Food Science and Technology. Federal University of Technology Akure, Nigeria	Sept., 2006

RESEARCH GRANT AWARDS (11)

Role	Research Title	Grant organization	Amount (\$)
PI	Development of Magnetic Nano Biocatalyst for Economic Biorefinery of Soybean products	ND Soybean Utilization Council, 2020	30,340
PI	Biochemical synthesis of corn-based biomaterials for making edible bale net wrap	SBARE, 2019	8,500
PI	Biochemical synthesis of corn-based biomaterials for making edible bale net wrap	ND Corn Utilization Council, 2019	58,430
PI	Tangential flow filtration for downstream product recovery and purification	ND EPSCoR, 2019	29,654
PI	Development of rapid low-cost protocol for halal authentication of gelatin sources	Fundamental Research Grant Scheme, 2016	17,000
PI	Enhancement of antimicrobial properties of chitosan edible film using different bioactive biomolecules	Research and Innovation Grants, 2016	5,000
Co-PI	Production and quality parameters of halal local ingredients and natural products	Research and Innovation Grants, 2016	5,000
Co-PI	Defatted extracts of <i>Moringa oleifera</i> seeds: comparative optimization studies as a phytodisinfectant	Research and Innovation Grants, 2016	5,000
Co-PI	Study on natural colorants stability as pigment, dye wet coating agent	Research and Innovation Grants, 2016	5,000
Co-PI	Curriculum development for Halal Science	Research and Innovation Grants, 2016	30,000
Co-PI	Application of nanotechnology in the production of halal gelatin derived from camel carcasses.	National Plan for Science and Technology (NPST), 2013	500,000

HONOURS AND AWARDS

1. **Niche Area Scholarship**, International Islamic University Malaysia 2012-2014.
2. **Best Teaching Awards**- International General Certificate of Secondary Education, 2010-2011.
3. **1st Runner**, Road Run International Islamic School (Secondary), Malaysia, 2011.
4. **Silver Medal**: 2010 Taipei International Invention Show and Technomart Invention Contest, Taipei City, 2010,
5. **Best Production Innovation Award**: World Halal Research Summit, 23rd – 25th June 2010,
6. **Gold Medal**: 9th Malaysia Technology Expo, 9th Invention and Innovation Awards, 2010,
7. **Gold Medal**: IIUM Research, Invention and Innovation Exhibition (IRIIE' 2010), 2010.
8. **3rd best poster Award**: International Symposium on Halal Science and Management, 2009.
9. **Federal Government of Nigeria Scholarship Award**, 2004.
10. **Dean List**: School of Agricultural Technology, Federal Uni. of Technology, Akure, Nigeria, 2002.

WORK EXPERIENCE

- Research Assistant Professor**, North Dakota State University **2019 – present**
- Writing research proposal to seek local and international grants.
 - Writing scientific manuscripts publishable in impact factor journals.
 - Managing bioprocess laboratory.
 - Conducting food and bioprocess engineering practical classes.
 - Operating food processing equipment.
 - Counselling students to develop good morals and achieve academic excellence.
- Graduate Research Assistant**, North Dakota State University **2017 – 2019**
- Designed and conducted scientific experiments, including fabrication of reactors.
 - Organized and analyzed data using statistical packages and programming language.
 - Managed and purchased research items for bioprocess engineering laboratory.
 - Wrote scientific manuscripts.
- Assistant Professor**, International Islamic University Malaysia **2015 – 2017**
- Wrote research proposal to seek local and international grants.
 - Taught of food science and technology, bioprocess engineering.
 - Won and managed 5 research grants (2 as principal-researcher and 3 as co-researcher)
 - Authored scientific manuscripts in impact factor journals (6 publications).
 - Designed and conducted practical classes.
 - Planned and organized scientific exhibitions and conferences.
 - Counseled students to develop good morals and achieve academic excellence.
- International Visiting Researcher**, North Dakota State University **2014 –2015**
- Designed and conducted experiments in bioprocessing of wheat bran
 - Wrote research proposals to seek local and international research grants
 - Authored scientific manuscripts for publication in impact factor journals (4 publications).
- Teaching and Research Assistant**, International Islamic University Malaysia **2009 – 2014**
- Wrote research proposal for international grants
 - Designed and conducted scientific experiments, including optimization by response surface methodology.
 - Organized and analyzed data using statistical packages.
 - Managed and purchased research items.
 - Wrote scientific manuscripts from PhD and MSc research data (6 manuscripts)
- Quality control officer trainee**, Honeywell Fisheries Nigeria **1999-2000**
- Processed fishes, shrimps, crabs, and lobsters.
 - Maintained storage of products.
 - Ensured products qualities conformed to local and international requirements.
 - Recorded product inventory.

- Managed product processing crew.
- Developed and designed working protocol for quality assurance systems.

Baker trainee, Omooroki Bakery

2004

- Handled flour during storage.
- Formulated new products.
- Operated spiral mixer.
- Engaged in dough handling operations.
- Baked bread using coal and electric oven.

RESEARCH INTERESTS

1. Design of sustainable processing methods for cereals and other agricultural products.
2. Exploration of processing effect on food quality and sensory properties.
3. Food and byproduct process modelling using artificial intelligence.

SUPERVISORY ROLES

- Main supervisor: 2017
 - Student name: Husnah Anis
 - Project title: Development of Millard reaction based method for gelatin species differentiation
 - Level: MSc in Halal Science
 - University: Int. Islamic University, Malaysia
- Co-supervisor: 2017
 - Student name: Fatimah Babiker
 - Project title: Extraction optimization, purification and characterization bioactive compounds from Sudan Olibanum
 - Level: PhD in Biotechnology Engineering
 - University: Int. Islamic University, Malaysia

PUBLICATIONS

Journals (Published) (26)

1. Hamid, A.H., Elgharbawy, A.A., Rohman, A., Rashidi O., **Hammed, A.** and Nurulhidayah, A.F., 2019. Optimisation of browning index of Maillard reaction in gelatin powder by response surface methodology (RSM) for halal authentication. *Food Research*, 3(5), pp.525-529.
2. Idris, M.A., Jami, M.S. and **Hammed, A.M.**, 2019. Optimization process of *Moringa oleifera* seed extract using artificial neural network (ANN). *Malaysian Journal of Fundamental and Applied Sciences*, 15(2), pp.254-259.
3. **Hameed, A.M.**, Asiyani-H, T., Idris, M., Fadzillah, N. and Mirghani, M.E.S., 2018. A Review of Gelatin Source Authentication Methods. *Tropical life sciences research*, 29(2), p.213.
4. Sharma, S., Can, O.T., **Hammed, M.**, Nawarathna, D. and Simsek, H., 2018, "Organic pollutant removal from edible oil process wastewater using electrocoagulation". In *IOP Conference Series: Earth and Environmental Science* (Vol. 142, No. 1, p. 012079). IOP Publishing.
5. **Hammed, A.M.**, Stanley, G. and Asiyani, H.T., 2018. Gluten misconceptions and scam. *J Nutr Health Food Eng*, 8(2), p.110.
6. Asiyani, TT, W Bio-Sawe, Munirat Abolore Idris, and **Ademola Monsur Hammed**. 2017. "Gelatin-polysaccharide based materials: a review of processing and properties." *International Food Research Journal* no. 24 (Suppl.).AL-Kahtani, Hassan A, Irwandi Jaswir, Elsayed A Ismail, Mohammed Asif Ahmed,
7. **Ademola Monsur Hammed**, Saeed Olorunnisola, and Fitri Octavianti. 2017. "Structural characteristics of camel-bone gelatin by demineralization and extraction." *International Journal of Food Properties* no. 20 (11):2559-2568.
8. Hamizah, Anis, **Ademola Monsur Hammed**, Tawakalit Tope Asiyani-H, Mohamed Elwathig Saeed Mirghani, Irwandi Jaswir, and Ahamad Fadzillah. 2017. "Evaluation of Catalytic Effects of Chymotrypsin and Cu₂." *International journal of food science*.
9. **Hammed, A. M.**, Jaswir, I., Simsek, S., Alam, Z., & Amid, A. (2017). Enzyme aided extraction of sulfated polysaccharides from turbinaria turbinata brown seaweed. *International Food Research Journal*, 24(4), 1660-1666.
10. Alkhalf, M. M., Mohamed E. S., Marikkar, M. N., Kabbashi, N. A., **Hammed, A. M.**, Kabbashi, N.A (2017) The use of analytical techniques for qualitative differentiation of lipids extracted from cheese samples and lard. *Food Agriculture and Environment*, 15 (3 & 4). pp. 20-25. ISSN 1459-0255 E-ISSN 1459-0263.

11. Idris, Munirat Abolore and **Hammed, Ademola Monsur** and Jami, Mohammed Saedi and Jamal, Parveen 2017 Multivariate regression analysis of disinfection kinetics using *Moringa oleifera* defatted seed extract. *ARNP Journal of Engineering and Applied Sciences*, 12 (7). pp. 2248-2253. ISSN 1819-6608.
12. Idris, Munirat Abolore, Mohammed Saedi Jami, **Ademola Monsur Hammed**, and Parveen Jamal. 2016. "Moringa oleifera seed extract: A review on its environmental applications." *Int. J. Appl. Environ. Sci* no. 11:1469-1486.
13. **Hammed, Ademola Monsur**, BahriOzsisli and SenaySimsek. 2016. "Utilization of Microvisco-Amylograph to Study Flour, Dough, and Bread Qualities of Hydrocolloid/Flour Blends." *International Journal of Food Properties* no. 19 (3):591-604.
14. **Hammed, Ademola Monsur**, Sanjeev Kumar Prajapati, Senay Simsek, and Halis Simsek. 2016. "Growth regime and environmental remediation of microalgae." *Algae* no. 31 (3):189-204.
15. **Hammed, Ademola Monsur**, Bahri Ozsisli, Jae-Bom Ohm, and Senay Simsek. 2015. "Relationship between solvent retention capacity and protein molecular weight distribution, quality characteristics, and breadmaking functionality of hard red spring wheat flour." *Cereal Chemistry* no. 92 (5):466-474.
16. **Hammed, Ademola Monsur**, and Senay Simsek. 2014. "Hulled wheats: a review of nutritional properties and processing methods." *Cereal Chemistry* no. 91 (2):97-104.
17. Olorunnisola, S. K.; Asiyambi, -H. T.; **Hammed, A. M.**; Simsek, S. 2014. "Biological properties of lemongrass: An overview." *International Food Research Journal* no. 21 (2):455-462.
18. **Ademola Monsur Hammed**, Tawakalit Tope Asiyambi-Hammed, Irwandi Jaswir, Azura Amid and Md. Zahangir Alam,. 2013. "Effects of Drying Methods on Nitric Oxide Inhibition Potential of Water Soluble Extracts of *Turbinaria turbinata*: A Brown Seaweed Species of Malaysian Origin." *American Journal of Drug Discovery and Development* no. 3:279-285.
19. **Hammed, Ademola Monsur**, Irwandi Jaswir, Azura Amid, Zahangir Alam, Tawakalit Tope Asiyambi-H, and Nazaruddin Ramli. 2013. "Enzymatic hydrolysis of plants and algae for extraction of bioactive compounds." *Food reviews international* no. 29 (4):352-370.
20. Jaswir, I. and **Hammed, A. M.** 2011. "Anti-inflammatory compounds of macro algae origin: A review." *Journal of Medicinal Plants Research* no. 5:7146-7154.
21. Jaswir, Irwandi, **Hammed Ademola Monsur**, Senay Simsek, Azura Amid, Zahangir Alam, Mohammad Noor bin Salleh, Asiyambi-Hammed Tawakalit, and Fitri Octavianti. 2014. "Cytotoxicity and inhibition of Nitric oxide in lipopolysaccharide induced mammalian cell lines by aqueous extracts of brown seaweed." *Journal of oleo science* no. 63 (8):787-794.
22. Jaswir, Irwandi, Asiyambi-Hammed Tawakalit Tope, Raha A Raus, **Hammed Ademola Monsur**, and Nazaruddin Ramli. 2014. "Study on anti-bacterial potentials of some Malaysian brown seaweeds." *Food Hydrocolloids* no. 42:275-279.
23. **Monsur, Hammed Ademola**, Irwandi Jaswir, Hamzah Mohd Salleh, and Hassan A Alkahtani. 2014. "Effects of pretreatment on properties of gelatin from perch (*Lates niloticus*) skin." *International journal of food properties* no. 17 (6):1224-1236.
24. **Monsur, Hammed Ademola**, Irwandi Jaswir, Senay Simsek, Azura Amid, Zahangir Alam, and Asiyambi-Hammed Tawakalit. 2014. "Cytotoxicity and inhibition of nitric oxide syntheses in LPS induced macrophage by water soluble fractions of brown seaweed." *Food Hydrocolloids* no. 42:269-274.
25. Jaswir, Irwandi, and **Hammed Ademola Monsur**. 2011. "Fish gelatin production: extraction method and quality analysis." In.: IIUM Press.
26. **Monsur, Hammed Ademola**, Irwandi Jaswir, and Hamzah Mohd Salleh. 2010. "Nanostructural analysis of finogel (Fish Nano Gelatin) for new process development."

Book Chapters (4)

1. Swati S., **Ademola H.** Halis S. (2019) *Microbial Desalination Cells: In Bioelectrochemical Interface Engineering*. John Wiley & Sons, Inc. Online ISBN:9781119611103 |DOI:10.1002/9781119611103.
2. **Ademola Hammed** (2018) *Nanomaterials for Food Packaging: In Preparation and Processing of Religious and Cultural Foods*. Woodhead Publishing. Elsevier eBook ISBN: 9780081018934.
3. Amid, A., Semail, S., Wan Chik, W. D. & **Hammed A. M.** (2011). *Methods for screening the potential natural compound for treating metabolic disorder diseases: anti-inflammatory and griess assay [Nitric Oxide (NO) measurement]*.
4. Jaswir, Irwandi and **Hammed A.M.** & Mohd. Salleh, Hamzah (2011) *Fish gelatin production: extraction method and quality analysis*. In: *Experimental methods in modern biotechnology*. IIUM Press, Kuala Lumpur, pp. 81-95.

Under Review (1)

1. **Hammed, A. M.**, & Simsek, S. (2015) *Modification of polysaccharides: A Review of Biological properties*.

In preparation (2)

1. **Hammed, A.M.**, (2019) Proteomics for food authentication: In food traceability and authentication.
2. **Hammed A.M.** (2019) Development of Micro Algae Image Analyzer for qualification of microalgae in water.
3. **Hammed, A. M.**, (2017) Synthesis and characterization of iron-oxide nanoparticles using recirculatory electrochemical method.

SELECTED CONFERENCE PROCEEDINGS AND POSTAL PRESENTATIONS (10)

- **Ademola Hammed**, Oksana Zholobko, Andriy Voronov, Scott Pryor: Development of a continuous tubular electrosynthesis method for cellulolytic magnetic nanobiocatalyst production. 41st Symposium on Biotechnology for Fuels and Chemicals, Seattle, Washington, USA, April, 2019.
- **Hammed, Ademola Monsur**, Anis Hamzah, Tawakalit Tope Asiyanbi-H, Mohamed Elwathig Saeed Mirghani, Irwandi Jaswir, and Nurrulhidayah Ahmad Fadzillah. 2017. "Investigation of factors affecting development of browning during Maillard reaction of gelatin."
- **Monsur, Hammed Ademola**, Anis Hamzah, Tawakalit Tope Asiyanbi-H, Mohamed Elwathig Saeed Mirghani, Irwandi Jaswir, and Nurrulhidayah Ahamad Fadzillah. 2017. "Emerging sustainable technologies for transformation of gelatin and gelatin-based films."
- **Hammed, Ademola Monsur**, Asiyanbi-Hammed Tawakalit Tope, Kan Hin Low, Idris Oseni, and Munirat Abolore. 2017. "Chemometric analysis of UV-spectra: a novel, rapid and cheap method to differentiate bovine, porcine and fish gelatin."
- M.A. Idris, **Hammed A.M.**, Jaswir I., Jami M.S., and Jamal P., *Moringa oleifera seed extract: A halal friendly alternative water disinfection mechanism*. 2016.
- A.M. Hammed, Simsek S., Jaswir I., Amid A., and Alam M., *Cellulase aided extraction and characteristics of sulfated polysaccharides from Brown seaweed (Turinaria turbinata)*. 2016.
- Boosiri D., **Hammed A. M.**, Halis S. (2015) A Method to Determine biodegradability of Dissolved Organic Nitrogen Using Laboratory Scale Column System. ND EPSCoR/IDeA State Conference - Innovations & Expressions Alerus Center - 1200 42nd Street South - Grand Forks, USA.
- Swati S., **Hammed A. M.**, Halis S. (2015) Effect of Solid Retention Time on Wastewater Derived Bioavailable Dissolved Organic Nitrogen. ND EPSCoR/IDeA State Conference - Innovations & Expressions Alerus Center - 1200 42nd Street South - Grand Forks, USA.
- **Hammed Ademola Monsur** (2013) Atomic Behaviors and Interactions: Moral Lessons for Mankind. 3rd International Conference on Islamic Education. Feb. 2013. Malaysia.
- **A.M. Hammed**, (2012) Effects of Drying Methods on Nitric Oxide Inhibition Potentials of Water Soluble Extracts of *Turbinaria turbinata*. International Conference on Halal Gums. 5-7th December, 2012. Park Royal Hotel, Penang, Malaysia.
- **Hammed A. M.** (2010) Finogel: Nanotechnological investigation of fish gelatin extraction. Taipei International Invention Show and Technomart Invention Contest, Taipei City, 2010,
- **Hammed A. M.** (2011) Nano structural Analysis of Fish Collagen Extracts for New Process Development. International Conference on Biotechnology Engineering' 11, Malaysia.
- **Hammed A. M.** (2010). Nano structural Analysis of Finogel (Fish Nano Gelatin) for New Process Development. 24th Symposium of Malaysian Chemical Engineers/1st International Conference on Process Engineering and Advanced Materials.
- **Hammed A. M.** (2009). Effects of Pre-treatment on Mechanical and Nano-Structural Properties of Fish Gelatin Extracted from Perch (*Lates niloticus*). International Symposium on Halal Science and Management 2009, Pan Pacific, KLIA, Malaysia.

EXPERIENCE WITH CONFERENCE ORGANIZATION (2)

1. Organizer and instructor at teaching training workshop on innovations in teaching techniques in science, Int. Islamic Secondary Schools.
2. Organizer Workshop on downstream process technology and functional properties of seaweed conducted by Bioprocess and Molecular Engineering Research Unit.

COURSES/WORKSHOP/SEMINAR ATTENDED (7)

- How to get published: preparing your manuscript, Elsevier Publishing Campus, 19 May, 2015.
- Successful grant application: getting it right, Elsevier Publishing Campus, 19 May, 2015.

- Teaching Methodology for Teachers, International Islamic University Malaysia, Centre for Teaching and Learning, 31st May–3rd June, 2010.
- Workshop on downstream process technology and functional properties of seaweed, International Islamic University Malaysia, Bioprocess and Molecular Engineering Research Unit, IIUM, April, 2010.
- World Halal Research Summit, Convention Center, KLCC, Malaysia, Halal Industry Development Corporation, 2010.
- Stage 2 Intermediate Course in Cambridge IGCSE Combine Science, Nilai International School, Malaysia, University of Cambridge International Examinations, 15 – 16 April 2010.
- FTIR Spectrochemical Imaging Seminar, DKSH Technology Sdn. Bhd., Petaling Jaya., Varian Technologies Pte. Ltd. 19th May, 2009

PROFESSIONAL MEMBERSHIPS (4)

- Asia-Pacific Chemical, Biological & Environmental Engineering Society.
- International Society of Food Engineering (ISFE).
- American Oil Chemists' Society.
- Malaysia Institute Food Technology

EXTRA-CURRICULAR ACTIVITIES

Sport Activities at International Islamic Secondary School, Gombak. 2010 – 2014.

- Yellow House Instructor
- Game Umpire.
- Member of Football Teacher Team.

Road Run, 2010 – 2013.

- Participating as Runner and Umpire

HOBBY

- Unfolding technological novelties