

## *Curriculum Vitae*

**Muhammad I. Massadeh (Ph.D. in Microbiology)**

Associate Professor

### *Personnel Details:*

**Nationality :** Jordanian  
**Date of birth:** 1 /10 /1974  
**Marital Status:** Married  
**Mailing Address :** Dept. of Biology and Biotechnology  
Faculty of Science  
The Hashemite University  
Al-Zarqa / Jordan  
**Tel :** +962/53903333 ext. 5047  
**E-mail :** massadeh@hu.edu.jo



### *Education background:*

- B.Sc. in Applied Biology (Microbiology), 1997, Jordan University of Science and Technology, JORDAN.
- M.Sc. in Microbiology, 2000, National University of Malaysia (UKM), MALAYSIA.

**Thesis title:** Biodegradation of sugar cane bagasse by *Aspergillus terreus* SUK-1 in solid substrate and submerged culture fermentation

- Ph.D. in Microbiology, 2004, National University of Malaysia (UKM), MALAYSIA.

**Thesis title:** Solid substrate fermentation of sugar cane bagasse for the production of cellulose, reducing sugars and animal feed

### *Professional Work Experience:*

- Researcher at the Royal Society for the Conservation of Nature (RSCN) in JORDAN, 1997. Biodiversity of Bats in Jordan, a joint Project with Durham University, England.
- Teaching Assistant at the Biotechnology Engineering Department, International Islamic University of Malaysia, 2003. Microbiology, Biochemistry, Biochemical and Microbiology Lab.
- Researcher at the Malaysian Palm Oil Board (**MPOB**), Microbiology Department in corporation with the New Energy Development Organization (**JAPAN**). July 1<sup>st</sup> 2003 – March 2004. “*ABE Fermentation and bio-Hydrogen production*”

- 2005 - till now, Assistant and Associate Professor at the Biological sciences and Biotechnology Department, **HASHEMITE UNIVERSITY, Jordan**.
- Currently, spending my sabbatical leave at Al-Zaytona University/AMMAN.

### **Societies and Membership:**

- Member, Malaysian Society for Microbiology, 1999-2004, Malaysia.
- Member, Society for Applied Microbiology (Synergy Division), 2001-2008, England.
- Member, European Federation of Biotechnology, 2003-2008, Denmark.
- Member, Intel ISEF for Science, since 2006, Jordan/USA.
- Member, National Centre for Biotechnology, since 2008, Jordan
- Advisor, International Science Foundation, since 2011, Sweden

### **Areas of interest:**

- Microbial physiology, Microbial Interactions, Enzymology, Biofuels, and Fermentation Technology.

### **Publications:**

- **Muhannad I. Massadeh**, Wan Mohtar Wan Yousoff, Jalil Kader & Othman Omar (2001). Synergism of Cellulase enzymes in Mixed culture Solid Substrate Fermentation. *Biotechnology Letters*. 23: 1771-1774.
- Wan Mohtar Wan Yousoff, **Muhannad I. Massadeh**, and Jalil Kader (2000). Solid substrate and Submerged Culture fermentation of sugar cane bagasse for the production of cellulase and reducing sugars by a local isolate *Aspergillus terreus* SUK-1. *Journal of Microbiology and Biotechnology*.10: 770-775.
- Wan Mohtar Wan Yousoff, **Muhannad I. Massadeh**, Othman Omar, and Jalil Kader (2000). Sugar cane bagasse degradation by Mixed Culture of *T. reesei* and *A. terreus* in Solid Substrate Fermentation. *Pakistan Journal of Biological Sciences*. 3(10): 1758-1761.
- Wan Mohtar Wan Yousoff, **Muhannad I. Massadeh**, Jalil Kader and Othman Omar (2003). Comparison of cellulolytic enzymes production by single-stage solid substrate fermentation (SSF) and submerged culture fermentation (SCF) and the combination of SSf and SCF fermentation systems. *Journal of Biosciences*. 14 (2): 7 – 17.

- **Muhannad I. Massadeh**, Wan Mohtar Wan Yousoff, and Jalil Kader (1999). Combination of Solid Substrate Fermentation (SSF) with Submerged Culture Fermentation (SCF) for reducing sugar production using sugar cane bagasse. 22<sup>th</sup> Microbiology Symposium. Universiti Kebangsaan Malaysia, Malaysia.
- Wan Mohtar, W. Y., **Massadeh, M. I.**, Jalil, K. & Wan Zahari, M. (2002). Solid substrate fermentation of sugar cane bagasse to animal feed. Proceeding of the workshop "Conersion of biomass into bioenergy". Serdang: New Energy and Industrial Technology Development Organization (NEDO) and Malaysian Palm Oil Board (MPOB).
- **Muhannad I. Massadeh**, Sahaid, K., Ngan, M. A., Morimoto, M., & Wan Mohtar Wan Yousoff (2003). Strain comparison for the production of Acetone-Butanol-Ethanol using Palm Oil Mill Effluent (POME) as a substrate. Proceeding of the workshop "Products from Biomass Biotransformations". Serdang: New Energy Development Organization (NEDO) and Malaysian Palm Oil Board (MPOB).
- Wan Mohtar, W. Y., **Massadeh, M. I.** (2003). The Production of Reducing sugar, Cellulase enzyme, and Ruminant feed from Solid Substrate Fermentation (SSF) of sugar cane bagasse. **In: *Advances in Materials Processing***. Che Husna Azhari (ed.). Kuala Lumpur: Institute of Materials Malaysia.
- Kamel, A., Qnais, E., Khoury, F., Tahtamouni, L., **Massadeh, MI.**, Al-Matubsi, H., and Abu-Ghalyun, Y. (2006). Reptilian skeletal muscle: physiological and fine structure properties of musculus iliofibularis of the Lizard *Chamaeleo Chamaeleo Recticrista*. Proc. 4<sup>th</sup> Int. Biol. Sci. pp: 201-205.
- **Massadeh MI**, and Modallal, N. (2008). Ethanol production from olive mill wastewater (OMW) pretreated with *Pleurotus sajor caju*. *Energy and Fuels*. 22: 150-154.
- Saadoun I, Wahiby L, Ababneh Q, Jaradat Z, **Massadeh MI**, and Al-Momani F (2008). Recovery of soil streptomycetes from arid habitats in Jordan and their potential to inhibit multui-drug resistance *Pseudomonas aeruginosa* pathogens. *World Journal of Microbiology and Biotechnology*. 24: 157-162.
- Khalid G. Fandi, Isam Y. Qudsieh, Suleyman A. Muyibi, and **Muhannad I. Massadeh** (2009). Water pollution status assessment of King Talal Dam, Jordan. *Advances in Environmental Biology*. 3: 92-100.
- **Muhannad I. Massadeh**, Abeer Fraij, and Khalid Fandi (2010). Effect of carbon sources on the extracellular lignocellulolytic enzymatic system of *Pleurotus sajor-caju*. *Jordan journal of Biological Sciences*. 3: 51-54.
- **Muhannad I. Massadeh** and Fatima Sabra (2011). Production and characterization of lipase from *Bacillus stearothermophilus*. *African Journal of Biotechnology*. 10(61): 13139-13146.

- **Muhannad I. Massadeh**, Fatima Sabra, Rana Dajani, and Alaa Arafat (2012). Purification of Lipase enzyme produced by *Bacillus stearothermophilus* HU1. Accepted for Oral Presentation in: International Conference on Eco-Systems and Biological Sciences; Penang, Malaysia.
- Khalid Fandi, **Muhanad Massadeh** and Hartmut Laatsch (2012). LC-MS/MS Profiling-based Metabolite Screening of Thermophilic Bacteria from Jordanian Hot Springs. International Conference on Applied Chemistry and Pharmaceutical Sciences; Penang (Malaysia)
- **Muhannad I. Massadeh** and Ameineh N. Radwan (2012). Production of Branched Chain Ketoacid Dehydrogenase Enzyme by Thermophilic Bacteria Isolated from Ma'In Hot springs in Jordan. International Conference on Sciences; Al al-Bayt university in corporation with Universiti kebangsaan Malaysia (Jordan)
- **Muhannad I. Massadeh and Khalid Fandi (2014)**. Acetone-Butanol-Ethanol (ABE) production by anaerobic Microflora growing on Olive Mill Wastewater. Journal of Biobased Materials and Bioenergy. 8: 94-98.
- Kayed A. Abu Safieh, Manal M.Al-Oqal, Mikdad T. Ayoub, and **Muhannad I. Massadeh** (2014). Synthesis, Characterization and Antimicrobial Activity of Some 5-Aryl-(2E, 4E)-Pentadienoic Acid Derivatives. Journal of Chemical, Biological and Physical Sciences. 4: 1927-1935.
- Abeer Fraij and **Muhannad I. Massadeh** (2015). Use of *Pleurotus sajor-caju* for the Biotreatment of Olive Mill Wastewater. Romanian Biotechnological Letters. 20: 10611-10617.
- Nidal A. Odat<sup>1</sup>, Maen K. Hasan, Maher S. Obeidat, Mohamad A. Shatnawi, Saeid M. Abu-Romman, Issam M. Qrunfleh, and **Muhannad I. Massadeh** (2015). Identifying Selection Signatures Related to Domestication Process in Barley (*Hordeum vulgare* L.) Landraces of Jordan Using Microsatellite Markers. Jordan Journal of Biological Sciences. 8: 307-313.

### **Research Grants**

1- Simultaneous Saccharification and Fermentation of Olive Mill Wastewater for the production of bioethanol and organic acids. Funded by the Deanship of Research and higher education (Hashemite University)

Team: Muhannad I. Massadeh and Nabeel Modallal.

2- Biodeisel production from *Jatropha curcas*. Funded by the Deanship of Research and higher education (Hashemite University)

Team: Emad Bsoul and Muhannad I. Massadeh

3- Lab scale Bioreactor design for Methanegas production. Final year project Funded by King Abdullah II Centre for Design and Development Bureau (KADDB).

4- Production set-up of branched chain dehydrogenase enzyme from *Bacillus* sp. Isolated from Maen hot springs. Funded by the Deanship of Research and higher education (Hashemite University)

Team: Muhannad I. Massadeh and Farouq al-Qi'dan

5- Antimicrobial and Cytotoxic effects of a novel Non-Immunosuppressive agent Mecroptopurine MNITMIT. Funded by the Deanship of Research and higher education (Hashemite University)

Team: Muhannad I. Massadeh and Slim Abdelrahman

6- Utilization of Lipase enzyme produced by *Bacillus* sp. in the production of Biodeisel. 71300 JD funded by the **Ministry of Higher Education**.

Team: Muhannad I. Massadeh and Rana Dajani

### **Thesis Prepared under my supervision**

- Simultaneous Saccharification and Fermentation of Olive Mill Wastewater for the production of citric acid (Rasha Abu Mai, 2009).
- Production of branched chain ketoacid dehydrogenase enzyme by thermophilic bacteria isolated from Maen hot spring in Jordan (Ameinah Radwan, 2009).
- Effect of olive mill wastewater (OMW) on the germination and growth of selected plant crops (Kawthar Abu Tahun, 2010).
- Isolation of Potential Bacterial Strains for the Production of Antibiotics from Soil in the Area of the Hashemite University (Suha Qasrawi, 2011).
- Characterization and Purification of Lipase Enzyme Produced by *Bacillus* spp. Isolated from Raw Petrol (Fatima Sabra, 2011).
- Submerged culture fermentation of Olive Mill Wastewater (OMW) for the production of extracellular cellulase enzyme by *Trichoderma Viride* (Maram AlTharf, 2012)
- Single cell protein (SCP) production by airborne yeast isolated from Hashemite University Area (Ismail Ayesh, 2013)
- Utilization of dry olive mill residues (DOR) for the production of xylanase enzyme by *Aspergillus terreus* in solid state fermentation (Ammar Al shaikh, 2013)
- Utilization of Yeast Industry wastewater (YIW) by *Saccharomyces cerevisiae* to produce ethanol (Mohammad Mostafa Mohammad, 2016)
- Aerobic Bio-treatment of olive mill wastewater using airborne microorganisms (Ehab Al-omoush, 2016).

Thesis **Examined** by myself as part of the defense committee

- Biochemical activity and Genetic Polymorphism of Manganese Superoxide Dismutase among Breast Cancer Females in Jordan (Malak Abddel Fattah, 2009).
- Genotoxic and Cytotoxic effects of Alkaloids extracted from *Gentiana lutea* L. on mice cells (Anmar Hussein, 2009)
- Studying genetic variation among and within wild populations of (*Artemisia herba-alba* Asso.) from different locations in Jordan using RAPD molecular markers (Khuloud Joma'a, 2010)
- A study of Airborne Fungal Spores in the Atmosphere of Zarqa area, Jordan (Raghda Barham, 2011).
- A study of Airborne Fungal Spores in the Atmosphere of Zarqa area, Jordan (Raghda Barham, 2011).
- In vivo Effect if Vaginal Douching on Vaginal Candidiasis using Mice model (Laila Aljundi, 2011)
- Isolation of *Paenibacillus* larvae from Honeybees in Jordan and screening of different antibiotic from efficacy against American Foulbrood (Alaa Altelawi, 2011)
- Antimicrobial activities of different crude extracts of the White Wall Rocket, *Doplotaxis erucoides* (Wafaa Abu Taleb, 2012)
- Screening of Rhizobacteria for their antagonistic activities against certain plant pathogens (Muhammad Zallom, 2013)
- Biological activities of alkaloid leaf extract of *Rosmarinus officinalis* as antimicrobial and its genotoxicity on mice bone marrow cells (Sawsan Qanadilo, 2013).

### **Courses that I teach at the Hashemite University**

- 1- General Microbiology
- 2- Microbial Physiology
- 3- Enzymology for Postgraduates
- 4- Food Bacteriology for Postgraduates
- 4- Applied Microbiology
- 5- Separation of Biological Molecules
- 6- Biological Reactors
- 7- Preparation of Biologically related solutions
- 8- Fermentation technology
- 9- General biology 2104101 (Theory & Lab)

### **Referees**

1- Prof. Dr. Wan Mohtar Wan Yusoff  
School of Bioscience and Biotechnology  
43600 Universiti Kebangsaan Malaysia  
Bangi, Selangor  
Malaysia  
Email: wantar@ukm.edu.my

2- Prof. Dr. Khalid Hameed  
344 Biological Sciences Building  
Duke University  
Campus Box: 90338  
Email: khalid.hameed@duke.edu

3- Prof. Dr. Khalid Abu-Elteen  
Department of Biology and Biotechnology  
Faculty of Science  
The Hashemite University  
Azzarqa  
JORDAN  
Email: salma@hu.edu.jo