Resume

Haider Jawad Kadhum
Agricultural and Biosystems Engineering
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Education and Training

Ph.D. Agricultural and Biosystems Engineering	Biofuel production	Oregon State University, Corvallis, OR, USA 2014 – 2019
M.Sc. Agricultural Mechanization	Agricultural machines and equipment	Baghdad University, Baghdad, Iraq June 1992
B.Sc. Agricultural Mechanization		Baghdad University, Baghdad, Iraq May 1995

Research and Professional Experience

Associate professor	Agricultural and Biosystems Engineering	Al-Qasim Green University, Babylon, Iraq June 2020
Research assistant	Bioreactors for biofuel production	Oregon State University, Corvallis, OR, USA July 2018
Lecturer	Agricultural Machinery	Babylon University, Iraq January 2008
Assistant Lecturer	Agricultural Machinery	Babylon University, Iraq November 2004

Synergistic Activities

1. **Positions, Duties, and Tasks**

   - Cultural Attaché at the Embassy of the Republic of Iraq-Washington D.C 2022-present
   - Associate Dean - College of Agriculture - Al-Qasim Green University. 2020-2022
   - Faculty Member - College of Agriculture – Al-Qasim Green University. 2012-2022
   - Faculty Member of College of Agriculture Council. 2005-2013
   - Head deputy of Soil and Water Science Department 2005-2013
   - Faculty Member - College of Agriculture - Babylon University. 2004-2012

2. **Teaching**

Engineering drawing	200 level	Babylon University, Iraq
Tractors and farm power	300 level	Babylon University, Iraq
Combined Harvesters and Harvesting equipment	300 & 400 level	Babylon University, Iraq
Tractors and farm power	300 level	Al-Qasim Green University, Iraq
Combined Harvesters and Harvesting equipment	300 & 400 level	Al-Qasim Green University, Iraq

3. **Member Organizations**
   - American Society of Agricultural and Biological Engineers ASABE, USA
   - Iraqi Student Association (ISAQ), Oregon - USA
   - Iraqi Society of Agricultural Engineers.
   - Association of Scientific Researchers in Iraq.
   - Iraqi Education Society.

4. **Workshop and Training:**
    - Training course of teaching maneuvers, 1-10 March 2005, Babylon University, Babylon, Iraq.
    - Corrosion management under extreme environmental conditions and equipment storage methods ,10-18 August 2009, Babylon University, Babylon, Iraq.
    - Chemical and biological security training for Iraqi nationals, 18-20 December 2018, USDS, New Orleans, Louisiana. USA
    - Chem/Bio Lab design training for Iraqi nationals, 11-13 June 2019,DTRA BTRP, Denver, Colorado. USA
    - Teaching and learning training course , 7 January 2019 -15 March 2019, Oregon State University, Corvallis , Oregon, USA.

5. **Skills**

    - Technoeconomic analysis "SuperPro Designer"
    - Life Cycle Assessment "OpenLCA"
    - Arduino controllers and sensors .
    - Matlab. Intermediate level skills.
    - Designing and building controllable reactors.
    - Pretreatment processes of lignocellulosic biomass.
    - High solid lignocellulosic biomass hydrolysis and fermentation.
    - Adjustment and calibration of Agricultural Machines.
    - Experience in using the important workshop's tools and machines "Lathe, saws, sanding and grinding machines"

Awards and Grants:

- Iraqi Science Day Award, 2020. Agricultural and Veterinary science. The Iraqi Ministry of Higher Education and Higher Education. "A comparative account of glucose yields and bioethanol production from separate and simultaneous saccharification and fermentation processes at high solids loading with variable PEG concentration."

- Sun Grant - Western Regional Center . 2018
  A Controllable Horizontal Reactor for High Solid Biomass Conversion to Yield a High Concentration of Ethanol and Bio-based Chemicals

Certificate of Appreciation:

- Minister of Higher Education and Scientific Research in Iraq. 3 certificates of appreciation
- The President of Babylon University. 7 certificates of appreciation
- The President of Al-Qasim Green University. 8 certificates of appreciation
- The Dean of Agriculture College. 5 certificates of appreciation
- Saturday Academy Organization, Portland, USA. 2 certificates of appreciation

Publications

1. Kadhum, H.J., Murthy, G.S., 2022. Novel system design for high solid lignocellulosic biomass conversion. Bioresour. Technol. 350, 126897. https://doi.org/10.1016/j.biortech.2022.126897
2. Cheng, M.H., Kadhum, H.J., Murthy, G.S., Dien, B.S., Singh, V., 2020. High solids loading biorefinery for the production of cellulosic sugars from bioenergy sorghum. Bioresource Technology. , 318:124051. DOI: 10.1016/j.biortech.2020.124051.
3. Kadhum, H. J., Mahapatra, D. M., & Murthy, G. S., 2019. A comparative account of glucose yields and bioethanol production from separate and simultaneous saccharification and fermentation processes at high solids loading with variable PEG concentration. Bioresource technology, 283, 67–75. https://doi.org/10.1016/j.biortech.2019.03.060
4. Kadhum, H.J., Mahapatra, D.M. and Murthy, G.S. 2019. A novel method for real-time estimation of insoluble solids and glucose concentrations during enzymatic hydrolysis of biomass. Bioresource Technology.275:328-337. DOI: 10.1016/j.biortech.2018.12.071
5. Mahapatra, D.M., Mahapatra, R., Singh, L., Kadhum, H.J., Murthy, G.S., Chanakya, H.N., Joshi, N.V. and Ramachandra, T.V., 2019. Phosphorus Capture, Immobilization and Channeling Through Algae for a Sustainable Agriculture. In Soil Fertility Management for Sustainable Development (pp. 1-11). Springer, Singapore.
6. Kadhum, H. J. 2019. Novel System Design and Operational Strategies for the Production of Biofuels and Bioproducts, A Dissertation submitted to Oregon State University, Oregon State University. Corvallis, Oregon, USA.
7. Kadhum, H.J. and Murthy, G.S., 2019. Novel System Design for High Solid Lignocellulosic Biomass Conversion Part I: System Design and Construction. In AN ABSTRACT OF THE DISSERTATION OF (p. 153).
8. Kadhum, H.J. and Murthy, G.S., 2019.Novel System Design for High Solid Lignocellulosic Biomass Conversion Part II: Evaluation of System Performance. In AN ABSTRACT OF THE DISSERTATION OF (p. 177).
9. Kadhum, H.J., Rajendran, K. and Murthy, G.S. 2018. Optimization of Surfactant Addition in Cellulosic Ethanol Process Using Integrated Techno-Economic and Life Cycle Assessment for Bioprocess Design. ACS Sustainable Chemistry & Engineering.
10. Kadhum, H.J., Rajendran, K. and Murthy, G.S. 2017. Effect of solids loading on ethanol production: Experimental, economic and environmental analysis. Bioresource Technology. 244:108-116.
11. Kadhum, H. J. 2013. Duration effect of whitening machine on grain temperature, moisture content and rice manufacturing indicators. Journal of Karbala University, 11(2), 133-139. Retrieved from https://iasj.net/iasj?func=fulltext&aId=73430.
12. Kadham Algidsawi, A.J., Hashim, A. and Kadhum, H.J., 2011. The effect of (LiF, CuCl2. 2H2O) on mechanical properties of poly-vinyl alcohol. European Journal of Scientific Research, 65(1).
13. Kadham Algidsawi, A.J., Kadham, H.J. and Ahmed Hashim, A.G., 2011. The dielectric properties of (PVC-Zn) composites. Australian Journal of Basic and Applied Sciences, 5(11).
14. Algidsawi, A.J.K., Hashim, A. and Kadhum, H.J., 2011. Study of Mechanical Properties of (PVA-TiO2, BaSO4. 5H2O) Composites.
15. Kadhum, H. J. 2009. A mathematical model of the relationship between threshing cylinder speed and percentage of damaged wheat grain at different combine harvester ground speeds. Journal of Babylon University, 17(1), 172-181. Retrieved from https://iasj.net/iasj?func=article&aId=30385.
16. Kadhum, H. J., Sarwan, A. S., and Hasoon, W. H. 2006. Evaluating of multiple-passing effects of agricultural tractor on the compaction level of recently ploughed soil. Journal of Babylon University, 12(7), 158-167.
17. Kadhum, H. J.,1995. Study of the effect of ground and threshing cylinder speed changing of combine University harvester on Amber 33 grain losses , A Thesis Submitted To The Council Of Agriculture as a part of MSc degree requirements, College of Agriculture, Baghdad University, Iraq

Conferences:

1. Kadhum, H.J. and Murthy, G.S. (2019, August). A Novel Horizontal Reactor Design for High Solid Biomass Conversion.S-1075 Science and Engineering for a Biobased Industry and Economy. USDA, Golden, Colorado. USA
2. Kadhum, H.J, Mahapatra, D.M. and Murthy, G.S. (2018, August). A comparative account of glucose yields and bioethanol production from SSF and SHF at high solids loading with variable PEG concentration. Biochemical conversion and bioprocess modeling session. Annual international meeting of American Society of Agricultural & Biological Engineers (ASABE), Detroit. MI, USA
3. Kadhum, H.J. and Murthy, G.S. (2018, August). A novel horizontal reactor design for high solid biomass conversion. Renewable Energy Resources and Technology session. Annual international meeting of American Society of Agricultural & Biological Engineers (ASABE), Detroit. MI, USA
4. Kadhum, H.J, Mahapatra, D.M. and Murthy, G.S. (2018, August). Lignocellulosic biomass recycling approach for high glucose conversion, and more commercially feasible process. Poster session. Annual international meeting of American Society of Agricultural & Biological Engineers (ASABE), Detroit. MI, USA
5. Kadhum, H.J, Rajendran, K. and Murthy, G.S. (2017, July). Effect of Polyethyleneglycol (PEG) on adsorption with lignin for enhanced conversion of lignocelluloses to ethanol. Poster session. Annual international meeting of American Society of Agricultural & Biological Engineers (ASABE), Spokane .WA, USA
6. Kadhum, H.J. and Murthy, G.S. (2016, August).A Fed-Batch Approach to Biomass Enzymatic Hydrolysis Process to Produce High Final Glucose Concentrations. Poster session.S-1041 Science and Engineering for a Biobased Industry and Economy. Western Regional Research Center, ARS, USDA, Albany, CA. USA
7. Kadhum, H.J. and Murthy, G.S. (2016, July).A Fed-Batch Approach to Biomass Enzymatic Hydrolysis Process to Produce High Final Glucose Concentrations. Prestation at the Annual international meeting of American Society of Agricultural & Biological Engineers (ASABE), Orlando, FL, USA