

CURRICULUM VITAE

Dr. Fadwa Dababneh

E-mail: f_dababneh@asu.edu.jo

EDUCATION

- Ph.D. in Industrial Engineering and Operations Research, University of Illinois at Chicago (UIC), **01/2015-08/2018** (GPA: 3.91/4)
- M. S. in Industrial Engineering and Operations Research, University of Illinois at Chicago (UIC), **01/2015-08/2016** (GPA: 3.91/4)
- B. S. in Industrial Engineering and Operations Research, University of Illinois at Chicago (UIC), **08/2011-12/2014** (GPA: 3.95/4)

PROFESSIONAL EXPERIENCE

- 9/2021 – present** Assistant Professor, Department Industrial Engineering, German Jordanian University (GJU), Madaba, JO
- 6/2019 – 9/2021** Assistant Professor, Department of Mechanical and Industrial Engineering, Applied Science Private University (ASU), Amman, JO
- 6/2019 – 9/2021** Assistant Director of Make Impact Department, Innovation and Entrepreneurship and Center, Applied Science Private University (ASU), Amman, JO
- 8/2018 – 6/2019:** Assistant Professor, Department of Manufacturing Engineering, Georgia Southern University (GSU), Statesboro, GA, USA.
- 8/2016 – 3/2018:** Electricity and Gas Retail and Market Analyst, Constellation, Exelon, IL, USA.
- 12/2012-7/2015:** Editorial Assistant for International Journal of Heat and Mass Transfer, Numerical Heat Transfer, and International Communication in Heat and Mass Transfer, Department of Mechanical and Industrial Engineering, University of Illinois at Chicago (UIC), IL, USA.

AWARDS AND HONORS

- Faculty Research SEED Grant, Cloud-based collaborative demand response for manufacturers in the smart grid, 2018
- Faculty Research SEED Grant, FSS-based sensing grid for temperature sensing manufacturing using 3D printing technology, 2018
- Institute for Environmental Policy and Science Predoctoral Fellowship, 2017
- Provost Award for Graduate Research, 2016
- **Honors:** Summa Cum Laude University Honors, Dean's List, Tau Beta Pi Engineering Honors Society, Golden Key International Honor Society

RESEARCH EXPERIENCE

Sustainable Manufacturing Systems Research Laboratory, UIC

Research Assistant and Energy Consultant

11/2016-08/2018

U.S. Department of Energy Industrial Assessment Center: Energy Efficiency, Smart Manufacturing, and Cyber Security (DE-EE0007722; \$2,087,872)

- Perform energy audits/assessments for small and medium-size industrial facilities.
- Perform utility bill analysis and develop forecast models for future energy usage trends.
- Research and recommend energy solutions, reinforced by energy and cost savings calculations, to plant management.
- Prepare preassessment reports, final reports, and follow-up presentations for audited companies and the Department of Energy.
- Prepare several conference and journal publications related to energy and cost efficiency, acquired from field experience and assessments.
- Types of facilities assessed include manufacturers of lead oxides, steel beams, acoustic automotive parts, plastic injection molding, etc.

Sustainable Manufacturing Systems Research Laboratory, UIC

Research Assistant

10/2013-08/2018

NSF GOALI Collaborative Research (with General Motors): Cost-Effective Energy Efficiency Management of Sustainable Manufacturing Systems (CMMI-1131537; \$246,355)

- Develop simulation models based on automotive assembly line to study the feasibility and potential of effective energy management methods in advanced manufacturing systems.
- Establish energy efficiency management and electricity demand response models for typical manufacturing systems with multiple machines and buffers towards sustainable manufacturing.
- Set up software and hardware test beds to verify the project deliverables.

JOURNAL PUBLICATIONS

Sun, Z., Li, L., Bego, A. and **Dababneh, F.**, 2015. Customer-side electricity load management for sustainable manufacturing systems utilizing combined heat and power generation system. *International Journal of Production Economics*, 165, pp.112-119.

Sun, Z., Li, L. and **Dababneh, F.**, 2016. Plant-level electricity demand response for combined manufacturing system and heating, venting, and air-conditioning (HVAC) system. *Journal of Cleaner Production*, 135, pp.1650-1657.

Dababneh, F., Li, L. and Sun, Z., 2016. Peak power demand reduction for combined manufacturing and HVAC system considering heat transfer characteristics. *International Journal of Production Economics*, 177, pp.44-52.

Dababneh, F., Li, L., Shah, R. and Haefke, C., 2018. Demand Response-Driven Production and Maintenance Decision-Making for Cost-Effective Manufacturing. *Journal of Manufacturing Science and Engineering*, 140(6), p.061008.

Sun, Z., **Dababneh, F.** and Li, L., 2018. Joint Energy, Maintenance, and Throughput Modeling for Sustainable Manufacturing Systems. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*. DOI:10.1109/TSMC.2018.2799740

Dababneh, F. and Li, L., 2018. Integrated Electricity and Natural Gas Demand Response for Manufacturers in the Smart Grid. *IEEE Transactions on Smart Grid*. DOI: 10.1109/TSG.2018.2850841

Li, L., **Dababneh, F.** and Zhao, J., 2018. Cost-effective supply chain for electric vehicle battery remanufacturing. *Applied Energy*, 226, pp.277-286.

Chen, Y., **Dababneh, F.**, Zhang, B., Kassae, S., Smith, B.T., Liu, X. and Momen, A.M., 2020. Surrogate Modeling for Capacity Planning of Charging Station Equipped With Photovoltaic Panel and Hydropneumatic Energy Storage. *Journal of Energy Resources Technology*, 142(5).

CONFERENCE PAPERS

Dababneh, F., Atanasov, M., Sun, Z. and Li, L., 2015, June. Simulation-based electricity demand response for combined manufacturing and HVAC system towards sustainability. In *ASME 2015 International Manufacturing Science and Engineering Conference* (pp. V002T05A009-V002T05A009). American Society of Mechanical Engineers.

Dababneh, F., Shah, R., Sun, Z. and Li, L., 2017, June. Framework and sensitivity analysis of joint energy and maintenance planning considering production throughput requirements. In *ASME 2017 12th International Manufacturing Science and Engineering Conference collocated with the JSME/ASME 2017 6th International Conference on Materials and Processing* (pp. V003T04A062-V003T04A062). American Society of Mechanical Engineers.

Ge, Y., **Dababneh, F.** and Li, L., 2017. Economic Evaluation of Lignocellulosic Biofuel Manufacturing Considering Integrated Lignin Waste Conversion to Hydrocarbon Fuels. *Procedia Manufacturing, 10*, pp.112-122.

Shahjahan Hossain, MD, **Dababneh, F.**, Krenek, R., Taheri, H., Ultrasonic Phased Array Technique for Defect Detection and Sizing in Heavy-Walled Cast Components, Accepted in NDE for IMECE 2020

WHITEPAPERS

Restructuring Recharged, The Superior Performance of Competitive Electricity Markets 2008-2016, *RESA-Retail Energy Supply Association*, April 2017.

Evaluating Power Purchasing Strategies for Your Business- How Power Purchasing Strategies Perform Across Varying Market Conditions, *A Constellation Whitepaper*, August 2018.

TEACHING EXPERIENCE

Applied Science Private University, ASU

Assistant Professor

IE 232- Statistics and Probability 2.....Fall 2019, Spring 2020, Fall 2020, Summer 2021
IE 370- Quality controlSummer 2019, Spring 2020
IE482- Simulation Spring 2020, Summer 2020
IE 574- Product Development and Entrepreneurship..... Fall 2019, Spring 2020, Fall 2020
IE 413- Introduction To Data Analytics and Machine Learning..... Spring 2021, Summer 2021

Manufacturing Engineering Department, GSU

Assistant Professor

MFGE 3122- Engineering Modeling and Mathematical AnalysisFall 2018
MFGE 3122- Engineering Modeling and Mathematical AnalysisSpring 2019
TMAE 5133- Production Planning and Facility Design.....Spring 2019

Mechanical and Industrial Engineering Department, UIC

Visiting Lecturer

IE 442- Design of Experiments.....Fall 2017

Teaching Assistant

IE 446- Quality Control and Reliability.....Spring 2015
IE 461- Safety Engineering.....Fall 2015
IE 446- Quality Control and Reliability.....Spring 2016
IE 461- Safety Engineering.....Fall 2016
IE 594- Time Series Analysis and Forecasting.....Fall 2016
IE 472- Operations Research II.....Spring 2018

INDUSTRY PROJECTS

GE Transportation

05/2015-05/2016

Locomotive Paint Shop Production Scheduling

- Attended plant visits and telecom meetings with upper management on project deliverables.
- Developed simulation models based on the locomotive assembly line and paint shop to study the feasibility and potential of effective energy management.
- Developed a scheduling algorithm to obtain an optimal production sequence that minimizes the production make-span.

Progress Rail Services, Subsidiary of Caterpillar, Inc.

08/2014-12/2015

Warehouse and Traffic Flow Analysis and Design

- Constructed a baseline simulation model and case studies to guide bottleneck identification and layout recommendations.
- Recommended alternative layouts for the shipping and receiving yard and parking lot.
- Increased holding capacity of trucks in the yard by 5 slots and increased service capability by 60%.

SERVICE

Conference Track Chair:

- Track on “Cyber-Physical Manufacturing: Energy Management”, ICPR 2019 International Conference on Production Research, Chicago, IL, USA, August 10th-14th, 2019.

Conference Co-Organizer:

- Session on “Additive Manufacturing: Processing & Materials”, ASME 2017 International Conference on Manufacturing Science and Engineering (MSEC), Los Angeles, CA, USA, June 8th, 2017.

Journal Reviewer:

- IEEE Transactions on Smart Grid
- International Journal of Production Economics
- Journal of Cleaner Production
- Reliability Engineering & System Safety
- International Journal of Energy Sector Management
- Transportation Research Part E: Logistics and Transportation Review
- Utilities Policy

Conference Reviewer:

- Proceedings of American Society of Mechanical Engineering, Manufacturing Science and Engineering Conference (ASME MSEC)
- Proceedings of Complex Adaptive Systems, Engineering Cyber-Physical Systems Conference

Student Organization Volunteer:

- GSU Manufacturing Engineering K-12 Outreach Chair, 2018
- Women in Science and Engineering (WISE) mentor, 2015
- Society of Women Engineers (SWE) volunteer, 2015
- Tau Beta Pi (TBP) study night coordinator, 2014

GRADUATE COURSEWORK

Data Mining for Business, Time Series Analysis and Forecasting, Data Mining and Machine Health, Advanced 3D Printing/Additive Manufacturing, Applied Statistical Methods II, Ergonomics and Human Factors, Industrial Energy Management, Heating Ventilation and Air Conditioning, Process Mining, Distributed Decision Making, Operations Management

UNDERGRADUATE COURSEWORK

Engineering Economy, Probability and Statistics, Introduction to Electrical and Computer Engineering, Introduction to Thermodynamics, Work Productivity, Regression Applications and Forecasting in Engineering, Manufacturing Process Principles, Quality Control and Reliability, Design of Experiments, Operations Research I, Operations Research II, Stochastic Processes and Queuing Models, Discrete Event Simulation, Production Planning and Inventory Control, Plant Layout and Material Handling