CURRICULUM VITAE

Dr. Fadwa Dababneh

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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

3/2025 – present Director: Technology, Research, and Innovation Park, German Jordanian University (GJU), Madaba, JO

6/2024 – present Founding Director: Circularity Hub for EV batteries, German Jordanian University (GJU), Madaba, JO

9/2021 – present Assistant Professor: Department of Industrial Engineering, German Jordanian University (GJU), Madaba, JO

6/2019 – 9/2021 Assistant Manager: Make Impact Department, Innovation and Entrepreneurship Center, Applied Science Private University (ASU), Amman, JO

6/2019 – 9/2021 Assistant Professor: Department of Mechanical and Industrial Engineering, 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: 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

- JSSR Innovative Green Projects Competition, 2025
- 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.

JOURNAL PUBLICATIONS

Dababneh, F., Aldababneh, H. Z., & Yang, Y., 2025. Third-party electric vehicle battery remanufacturing supply chains. *Cleaner Logistics and Supply Chain*, 100218.

Dababneh, F., Aldababneh, H., Khawaja, M. and Imam, R., 2025. Policies and actions for electric vehicle battery waste processing using an integrated QFD approach: A case study for Jordan. *Heliyon*. DOI: 10.1016/j.heliyon.2025.e41940

Marks, M., Aswani, K., Weaver, G., **Dababneh, F**. and Taheri, H., 2024. Applying Digital Twin Methods for Process-structure-property Correlation Assessment in Metal Additive Manufacturing with Limited Experimental Data. *Research in Nondestructive Evaluation*. DOI: 10.1080/09349847.2024.2440353

Rahman, M.A., Taheri, H., **Dababneh, F**., Karganroudi, S.S. and Arhamnamazi, S., 2024. A review of distributed acoustic sensing applications for railroad condition monitoring. *Mechanical Systems and Signal Processing*, *208*, p.110983.

Rahman, M.A., Kim, J., **Dababneh, F**. and Taheri, H., 2024. Railroad condition monitoring with distributed acoustic sensing: an investigation of deep learning methods for condition detection. *Journal of Applied Remote Sensing*, *18*, p.016512-016512.

Dababneh, F. and Taheri, H., 2022. Investigation of the influence of process interruption on mechanical properties of metal additive manufacturing parts. *CIRP Journal of Manufacturing Science and Technology*, *38*, pp.706-716.

Taheri, H., **Dababneh, F**., Weaver, G. and Butsch, B., 2022. Assessment of material property variations with resonant ultrasound spectroscopy (RUS) when using additive manufacturing to print over existing parts. *Journal of Advanced Joining Processes*, *5*, p.100117.

Cui, W., Yang, Y., Di, L. and **Dababneh, F**., 2021. Additive manufacturing-enabled supply chain: Modeling and case studies on local, integrated production-inventory-transportation structure. *Additive Manufacturing*, *48*, p.102471.

Chen, Y., **Dababneh, F**., Zhang, B., Kassaee, 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).

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

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

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

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.

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.

CONFERENCE PAPERS

Dababneh, F., Hamzeh, T., Yang, Y. and Taheri, H., Spent EV Battery Circularity Challenges and Opportunities: A Case For Jordan, In *IEEM 2024 IEEE International Conference on Industrial Engineering an Engineering Management,* pp. 348-352.

Chigurupati, P., **Dababneh, F**., Taheri, H. and Jones, M., Micro-Mechanical Property Evaluation of Heat-Treated Metal 3D Printed Parts Affected by Process Interruptions, In *IMECE 2024*, pp. V002T03A005.

Dababneh, F., Qaadan, S. and Taheri, H., Predicting the Elasticity of Metal Additive Manufacturing Parts Using Machine Learning, In *CIE 2023 50th Computers and Industrial Engineering Conference*.

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

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, 50749,* 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.

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.

WHITEPAPERS

The Untapped Potential of Spent EV Batteries: How Can Jordan's Economy Benefit? *Published by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)*, June 2023.

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

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

FUNDED RESEARCH PROJECTS

German Jordanian University, GJU

PI

GIZ-GAIN + JSSR: Circularity Hub for EV Batteries

2024-current

- Strengthen Jordan's readiness and attractiveness for investments in sustainable EOL solutions by developing strategies for remanufacturing, recycling, and repurposing spent batteries.
- Improve existing operational and safety protocols and support the establishment of a battery circularity consortium, in collaboration with key associations like EDAMA, GIZ, and the Ministry of Environment.
- Laboratory setup and development of proof-of-concept testbed for disassembly and inspection of EV batteries.

GJU SEED Grant: Sustainable EOL Management of EV Batteries through Remanufacturing

2023-current

- Investigate challenges hindering sustainable EV LIB EOL management.
- Study the detailed remanufacturing process and develop a remanufacturing process map.
- Develop a mathematical model to represent the remanufacturing system.
- Develop case studies and examine Jordan's readiness to implement remanufacturing.

Georgia Southern University, GSU

CO-PI 2018-2019

Faculty Research SEED Grant 1

- Cloud-based collaborative demand response for manufacturers in the smart grid.

Faculty Research SEED Grant 2

- FSS-based sensing grid for temperature sensing manufacturing using 3D printing technology.

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

- Performed energy audits/assessments for small and medium-size industrial facilities. *(Types of facilities assessed: lead oxides, steel beams, automotive parts, plastic injection molding, etc.)*
- Performed utility bill analysis and develop forecast models for future energy usage trends, followed by recommendations on energy and cost reduction solutions.
- Prepared pre- and post-assessment reports for audited companies and the Department of Energy.

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

- Developed simulation models based on automotive assembly line to study the feasibility and potential of effective energy management methods in advanced manufacturing systems.
- Established 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.

SELECTED INDUSTRY PROJECTS

Hikma Pharmaceuticals

10/2024-current

Student Graduation Project: Mitigating Inflation and Currency Fluctuation Risks: A Case Study of Hikma Pharmaceuticals in Egypt

- Estimate the effects of inflation and currency devaluation on procurement costs and monetary losses.
- Quantify financial pressure caused by increased raw material costs.
- Model scenarios of inflation and currency fluctuation and their predicted impact on the losses and costs.
- Introduce inflation-adjusted EOQ models to optimize stock levels.
- Find solutions to improve procurement efficiency and optimize the length of the cash-to-cash cycle.

Kärcher Futuretech

10/2023-02/2024

Student Graduation Project: Warehouse Analysis, Design and Improvement for Kärcher Futuretech

- Enhanced Kärcher Futuretech's storage capacity and warehousing efficiency by designing an efficient layout for a new warehouse, integrated with their existing facility using methods like Craft-based and Graph-based algorithms.
- Improved the storage space utilization for the anticipated growth using a class-based storage system.
- Reduced material handling travel distances by optimizing order picking.

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%.

INTERNATIONAL ACADEMIC PROJECTS

Joint Master of Science of Entrepreneurship & Innovation Management (MESIM-EIM)

2022-2024

- Created a Joint Master of Science in Entrepreneurship & Innovation Management degree program between the German Jordanian University and Magdeburg-Stendal University of Applied Sciences.
- Conducted a feasibility and market study for the Jordanian and German environment.

- Developed the study plan and curriculum for the joint program.
- Obtained accreditation for the program from the Ministry of Higher Education and the accreditation commission in Jordan.
- Ran a marketing campaign and held a program launch event under the patronage of the Minister of Digital Economy and Entrepreneurship.
- Recruited first cohort of enrolled students Sept 2024.

Intercultural Co-Creation for International Entrepreneurship Education (iCCiEE)

2023-2024

- Implemented in partnership with the University of Applied Sciences Dresden (HTW Dresden), New Uzbekistan University, and the German Jordanian University; and supported by the German Academic Exchange Service (DAAD).
- Developed a universally relevant framework and curriculum for entrepreneurship in higher education.
- Participated in an international 4-series workshop exchange between Jordan, Germany, and Uzbekistan.

DAAD Study Mobility Program TH-Köln

2022

- Hosted a group of 10 students and faculty and exposed them to Jordanian Entrepreneurship Ecosystem.
- Evaluated of Entrepreneurship Ecosystem pillars and inefficiencies in Jordan.
- Conducted a comparative analysis between German and Jordanian Entrepreneurship Ecosystems.

TEACHING EXPERIENCE

German Jordanian University, GJU

Assistant Professor

EIM 7101	Startup Building 1: Market opportunity to Engineering Concepts	*Fall 2024*
EIM 7312	Product Development and Prototyping	*Fall 2024*

IE 772	Special Topics in Innovation Management	*Fall 2024*
IE 515	Product Development and Entrepreneurship	*Fall 2023, Spring 2024*
IE 516	Facility and Asset Management	*Fall 2023, Summer 2024, Fall 2024*
IE 111	Introduction to IE	*Summer 2023, Spring 2024, Summer 2024*
IE 243	Materials Science and Engineering Lab	*Summer 2023*
IE 224	Materials and Mechanics Lab	*Summer 2023*
IE 121	Probability and Statistics	*Spring 2022, Summer 2022, Fall 2022, Spring 2024*
IE 597	Special Topics	*Summer 2022*
IE 721	Innovation & Entrepreneurship	*Spring 2022, Spring 2023*
IE 582	Facilities Layout	*Fall 2021, Fall 2022, Spring 2023*

Applied Science Private University, ASU
Assistant Professor

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

Manufacturing Engineering Department, GSU
Assistant Professor

MFGE 3122	Engineering Modeling and Mathematical Analysis	*Spring 2019*
TMAE 5133	Production Planning and Facility Design	*Spring 2019*
MFGE 3122	Engineering Modeling and Mathematical Analysis	*Fall 2018*

Mechanical and Industrial Engineering Department, UIC
Visiting Lecturer

IE 442	Design of Experiments	*Fall 2017*

Teaching Assistant

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

SERVICE

UNITE Campaign 2024! Invest to prevent violence against women and girls:

- The campaign urges citizens to showcase their efforts to end violence against women and girls while calling on governments to demonstrate their investments in gender-based violence prevention.

Conference Session Organizer:

- Session on “SCM - Supply Chain Management”, IEEE International Conference on Industrial Engineering and Engineering Management, Bangkok, Thailand December 15-18, 2024.

GJU Coordinator on SPARK effort:

- Innovation and Entrepreneurship curriculum development in Jordan, September 2021-current.

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), CA, USA, June 8th, 2017.

Journal Reviewer:

- IEEE Transactions on Smart Grid.
- International Journal of Production Economics.
- Journal of Cleaner Production.
- International Journal of Energy Sector Management.
- Utilities Policy, etc.

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.

GJU Committees:

- Joint master's Program, 2022-2024.
- SATS Marketing 2022.
- IE Hiring 2022-2024.
- IE Exposure and Community Presence 2022.
- Quality Engineering Lab Update 2022.
- School Council 2024-current.

Panel Participation

- *Sustainable Tourism Transport*, panelist, GGGI, 2024.
- *Global Insights, Local Actions: Transforming Battery Challenges into Economic Opportunities*, panel moderator, C-Hub, 2024.
- *The Role of Higher Education in Entrepuership Ecosystems*, panel moderator, GJU, 2024.
- *Unlocking the Potential of Spent EV batteries*, panelist, EDAMA, 2023.

Student Organization Volunteer:

- GSU Manufacturing Engineering K-12 Outreach Chair, 2018.
- Women in Science and Engineering (WISE) mentor, 201.
- 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.

Online Professional Profiles:

Google Scholar:	https://scholar.google.com/citations?user=B-wy7tAAAAAJ&hl=en
LinkedIn:	https://www.linkedin.com/in/fadwa-dababneh-212b6191/