Industrial & Manufacturing System Engineering Department

OMAR M ELMABROUK

Professor of Industrial and Manufacturing Systems Engineering.

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Qualifications

Ph.D. (Material and Metallurgical Eng.), Middle East Technical University, 2007 (Turkey)-**Awarded**.

M.Sc. (Industrial Eng.), Benghazi University, 2001 (Benghazi – Libya)

B.Sc. (Industrial Eng.), Benghazi University, 1991 (Benghazi – Libya)- A**warded**.

Past Positions /Commitment:

1993-2001 Member of spare parts classification committee, General Electrical Comp., Benghazi.

2001-2002 Teaching staff, Industrial Engineering Dept., Faculty of Engineering, Benghazi University.

2007 upto now Prof., Industrial Engineering Department, Faculty of Engineering, University of Benghazi.

2008 - 2012 Coordinator of Engineering Departments. / Elmaj Branch , Faculty of Engineering, University of Benghazi.

2015-2016 Head of Industrial Engineering Dept, Benghazi University.

2016-2021 Coordinator of graduate affairs at IE department, Benghazi University

2021-2023 Dean of Engineering Faculty**, Libyan International Medical University, Benghazi-Libya**

External Consultations

2010-2013 Head of the research and consultancy office at Engineering Faculty , Benghazi University.

Member of the technical committee of the fifth international

conference on industrial engineering and operations management (IEOM), which will be held at HYATT REGENCY DUBAI, Dubai, United Arab Emirates (UAE), March 3-5, 2015

Teaching Career

Undergraduate courses: Engineering Material, Manufacturing Processes and Engineering Maintenance.

Graduate courses: Corrosion and Material Selection for Desalination Plants, Casting and Welding, Inventory Control, Maintenance Management, Reliability Eng. Adv. material science

Training courses: Offered and given to the different organization engineers**,** Maintenance Management. Welding Technology. Nondestructive Testing (NDT)

Undergraduate Projects: Modeling, prediction and optimization of manufacturing processes, Scheduling project activities, Assessment of wind energy locations.

Research Interests
Research Tools

Modeling, Prediction and Optimization of Engineering processes.
Response Surface Methodology (RSM),
Artificial Neural Network. (ANN) and Fuzzy logic (FL).

Selected M.Sc.
Supervised thesis

1. Assessment of wind energy location at the east coast of Libya
2. Modeling and optimization of crude oil transportation processes through pipe line
3. Pipe line integrity management by means of modeling and prediction of corrosion penetration rate using fuzzy
4. Modeling and prediction of the bead shape and hardness for API 5l – x52 gas metal arc welds using response surface and fuzzy logic approaches
5. Prediction of Power transformer faults using fuzzy logic and artificial neural network.
6. Modeling and Prediction of 980HF Steel Sheet Spot-Welded Process Using RSM and Fuzzy Logic Technique (under processing)
7. Modeling and Optimization of Wax Deposition using Response Surface Methodology and Fuzzy logic Technique and based on Simulation Using Aspen HYSYS.

Research funds

1. Prediction of insulin dose for Type 1 diabetes mellitus using Fuzzy Logic Technique

Selected Publications

O. ElMabrouk, A. Kalkanli, E. Selcuk, A. Cetin. *Oxygen activity values to produce compacted graphite cast iron*. Canadian Metallurgical Quarterly, 47 (2008) 173-186

Omar M Elmabrouk and Salah M. Amaitik, *Neural Network Approach to Feature-Based Process Planning,* Engineering Reaserch Journal, vol.32,July 2009,PP 353-358 Facility of Engineering, Minoufiya University, Egypt

Omar M. Elmabrouk, Osama Erfan and Salah M. Amaitik, *Proposed Model for Optimization of Constrained Multipass Turning Operation.*, Journal of Engineering Science, Assuit University, Vol.37, No.4, PP 885-897, July 2009

O.ElMabrouk, A. Cetin, A. Kalkanli, E. Selcuk. *Application of cooling curve analysis as a process control tool to produce compacted graphite cast iron*. International Journal of Microstructure and Material Properties, 4 (2009) 368-375

Omar M Elmabrouk and Salaheddin O Bughadida, *Predicting Material Removal Rate of ECM of LM6 / B4C Al MMC Process using Fuzzy Logic.* International Journal of Trend in Research and Development, Volume 3(4), ISSN: 2394-9333, Jul-Aug 2016.

Omar M Elmabrouk and Farag A. Maetouq, *Predicting Material Removal Rate of EDM of 95WC/5NI Composites Using Fuzzy Logic,* Journal of Multidisciplinary Engineering Science and Technology (JMEST) ISSN: 2458-9403 Vol. 3 Issue 5, May – 2016.

Omar M Elmabrouk, Farag A Maetouq, Akram Esmeedah, *Achieving Time- Cost Project Scheduling by Using Linear Programming Technique*, The First Scientific Engineering Conference (Reconstruction - Development - Conservation), 26- 27 Dec. 2017, Benghazi – Liibya.

Omar M. Elmabrouk, Farag A. Meatouq and Hasan G. Elmazoghi, *Optimization of Corrosion Penetration Rate in Crude Oil Transportation Pipelines Using Response Surface Method,* BENGHAZI INTERNATIONAL FORUM AND EXHIBITION OF OIL AND GAS, (Bieog) 9-11 Oct. 2018, Benghazi-Libya.

Naji Abdelwanis, Abdelrahman S. Sultan, Omar M Elmabrouk, and Farag A. Maetouq, *Modeling and Prediction of High Temperature Oxidation of Steels used in Petroleum Refinery Heater,* BENGHAZI INTERNATIONAL FORUM AND EXHIBITION OF OIL AND GAS, (Bieog) 9-11 Oct. 2018, Benghazi-Libya.

Bushra H. Elmoghrabi, Norhan H. Aref, Abdelrahman S. Sultan* and Omar M. Elmabrouk, *MODELING AND PREDICTION OF CO2 CORROSION PENTRATION RATE OF PIPELINE USING FUZZY LOGIC TECHNIQUE,* Journal of Engineering Research (University of Tripoli) Issue (26) September 2018.

OM Elmabrouk, RY Taha, NM Ebrahim, SA Mohammed, *An implementation of fuzzy logic technique for prediction of the power transformer faults,* International Journal of Mechanical and Industrial Engineering 13 (6), 407-412, 2019

Abdelbaset R H Midawi and Omar M. Elmabrouk, *Estimating the Mechanical Properties for API-X52 Line Pipe Welds Using Cyclic Indentation Approach,* Journal of Environmental Science and Engineering, JESE, VOL. 1, No. 1, 2020

Galal H.Senussi and Omar Elmabruk, *Modeling and Prediction of Corrosion Penetration Rate in Crude Oil Pipelines Using Back Propagation Artificial Neural Network Approach,* Irish Interdisciplinary Journal of Science & Research (IIJSR) Vol.5, Iss.1, Pages 34-41, January-March 2021

Omar Al Denali, Abdelaziz Badi, *Application of Adaptive Neuro Fuzzy Inference Systems Technique for Modeling of Postweld Heat Treatment Process of Pressure Vessel Steel AASTM A516 Grade 70,* World Academy of Science, Engineering and Technology International Journal of Industrial and Manufacturing Engineering Vol:16, No:09, 2022.

Awards/scholarship	National Agency for Scientific Research, The third best MSc thesis, Mechanical and Industrial Section, Awarded 2021-2022 UOB: Bachelor Awarded 1991 METU: PhD Awarded 2007,