Mahmoud Rababah **(updated 9-April-2021)**

Marital Status: Married with four kids.
Nationality : Jordanian.
Languages : English, Arabic, and little French.
Date of Birth : 11 – Dec. – 1979.

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PROFILE

- Knowledge in various fields in mechanical and industrial engineering such as: CAD/CAM, manufacturing processes, CNC machining, stress analysis, mechanical design, finite element method, fracture mechanics, aerospace materials, composite materials, damage tolerance design, optimizations techniques, PLC programming, pneumatic and hydraulic systems.
- Knowledge in computer skills using a range of software (including CATIA, MATLAB, AutoCAD, Working Model, Ansys, Assembly language (Motorola and Intel), Microsoft office (Word, Excel, Power point and Visio).
- Possessing excellent oral and written communication skills.

EDUCATION

Concordia University, Montreal, CANADA **August, 2011**

- Ph.D., Mechanical Engineering.
- GPA (4.10/4.3).
- **PhD Thesis**: *A Practical and Optimal Approach to CNC Programming for Five-Axis Grinding of the End-Mill Flutes.*
- Courses: Materials Engineering for Aerospace Engineering, Micro Electro Mechanical Systems (MEMS), Numerical Controlled machines.

Concordia University, Montreal, CANADA **August, 2007**

- M.Sc., Mechanical Engineering.
- GPA (4.23/4.3).
- **Master's Thesis:** *Damage tolerance analysis using the eXtended finite element method.*
- Courses: Stress Analysis in Mechanical Design, Vibration in Machine Structures, Finite Element Methods in Machine Design, Mechanical Behavior of Polymer Composite Materials.

Jordan University of Science and Tech., Irbid, JORDAN **June, 2002**

- B.Sc. Mechanical Engineering.
- GPA (79.3/100). (Rank 6/95)

PROFESSIONAL EXPERIENCE

- **The Hashemite University, Zarqa, Jordan** **2012 – Present**
  - **Associate Professor** **April, 2019**
  - **Assistant Professor** **Sep., 2012**
    - Conducting research in several fields such as Solid mechanics, CAD/CAM, composite materials, etc
    - Teaching many courses in the Mechanical and Industrial engineering departments such as: CAD/CAM, Finite Element Analysis, machine design, strength of materials, dynamics, writing skills, mechanical drawing, AutoCAD drawings, special topics in mechanical engineering…etc. (ABET accredited program)
    - Member in many internal committees in the department and the faculty.

- **Concordia University, Montreal, Canada** **2005 – 2011**
  - **Research Assistantship**
    - Conducting a comprehensive research in CAD/CAM, 5-axis CNC milling, swept volume theory, mill-turn processes, cutter/workpiece engagement.
    - Establishing a novel five axis CNC tool grinding theory to grind end-mills with constant normal rake angles along the cutting edge.
    - Introducing a novel and optimum grinding wheel shapes and optimizing their paths to produce exact end-mills.
    - Simulating 2D cracks growths using XFEM based on the principals of the damage tolerance design.
    - Conducting projects in: (1) Finite Element Method titled as: "Investigating the accuracy and the effectiveness of the 3-node truss elements", (2) stress analysis titled as: "Investigating the strain compatibility of a deformed body having well-defined displacement conditions".

  - **Teaching Assistantship**
    - Teacher assistant for different courses in Mechanical and Industrial Engineering department, some are: Computer Aided Manufacturing (CAD), NC machines, Manufacturing Processes, theory of machine and vibration, stress analysis in mechanical design and machine design.

- **The Hashemite University, Zarqa, Jordan** **2002 – 2005**
  - **Lab. Instructor**
    - Conducting practical sessions in different mechanical and industrial engineering fields, some are: industrial automations, PLC programming, strength of material, mechanical drawing, pneumatic and hydraulic systems.
    - Safety supervisor in the mechatronics engineering department.

Awards/ Honors

Conference and exposition award (2011) – Concordia University.
PhD funding – Concordia University.
Master funding – Concordia University.
Dean honor list – Jordan University of Science and Technology (Winter 1998).
Dean honor list – Jordan University of Science and Technology (Fall 1997).

PUPLICATIONS

Journal Articles

Rababah, M., Wasif, M., Iqbal, S., "Parametric Relationship between Hypoid Gear Teeth and Accurate Face-Milling Cutter", Advances in Manufacturing, vol. 8 (2020), no. 4, pp. 537 – 555.

Rababah, M., Wasif, M., Omari, M., Mutawe, S., "A Novel Approach to Profile-Milling for End-Mill Flutes in 4–Axis CNC Turn-Milling Machines, Part I: Mathematical Modeling", International Review of Mechanical Engineering, vol. 13 (2019), no. 2, pp. 1– 8.

Rababah, M., Wasif, M., Omari, M., Mutawe, S., "A Novel Approach to Profile-Milling for End-Mill Flutes in 4–Axis CNC Turn-Milling Machines, Part II: Simulation and Verification", International Review of Mechanical Engineering, vol. 13 (2019), no. 3, pp. 203 – 2011.

Rababah, M., Wasif, M., Ahmed, A., Iqbal, S., "Accurate Machine-Settings for the Face-Milling of Hypoid Gears", International Review of Mechanical Engineering, vol 11 (2017), pp. 932-944.

Rababah, M., Almagableh, A., Aljarrah, M., "Five-axis Rake Face Grinding of End-mills with Circular-arc Generators". International Journal on interacting design and manufacturing, vol. 11 (2017), pp. 93-101.

Rababah, M "Five-axis CNC grinding of End-mills with Generic Revolving Profiles". Jordan journal of mechanical and industrial engineering, vol. 9 (2015), pp 159 – 165.

Aljarrah, M., Alkhazali, A., Obeidat, S., Almagableh, A., Rababah, M., "On Phase Equilibria of Sn-Sr and Mn-Sn-Sr Systems", Jordan journal of mechanical and industrial engineering, vol 8 (2014), pp. 359 – 367.

Almagableh, A., Mantena, R., Awwad, AS., Rababah, M., "Modeling of Creep Behavior for Graphene Filled Vinyl Ester Nano-Composites", Jordan journal of mechanical and industrial engineering, vol 8 (2014), pp. 343 – 350.

Rababah, M., Chen, C., and Wang, L., "A New Approach to Five-axis CNC Flute Grinding of Solid End-mills". Materials Science Forum, vol. 723 (2013), pp. 421-432.

Rababah, M., and Chen, C., "An Automated and Accurate CNC Programming Approach to Five-Axis Flute Grinding of Cylindrical End-Mills using the Direct Method ". Journal of Manufacturing Science and Engineering, Transaction of ASME, vol. 135 (2013), pp. 011011.

Almagableh, A., Mantena, R., Alostaz, A., Rababah, M., Aljarrah, M., Awwad, AS., "Modeling the Elastic Modulus of Exfoliated Graphite Platelets Filled Vinyl Ester: Analytical Predictions with Consideration of Filler Percolation". Journal of Composite Materials Vol. 49, pp. 1285-1290.

Aljarrah M., Essadiqi, E., Fouad, RH., Rababah, M., Almagableh, A., "The Effect of Annealing Conditions and Alloying Elements on the Microstructure Stability and Mechanical Properties of Mg-Zn-Cesheets". Applied Mechanics and Materials, vol 472, pp. 937-947.

Aljarrah, M., Obeidat, S., Fouad, RH., Rababah, M., Almagableh, A., Itradat, A., "Thermodynamic Calculations of the Mn–Sn, Mn–Sr and Mg–Mn–{Sn, Sr} Systems". IET Science, Measurement & Technology, vol 9, pp. 681-692.

Conference Articles

Rababah, M., and Chen, C., "Five axis CNC tool grinding, part I: rake face grinding". ASME 2011 International Manufacturing Science and Engineering Conference, Corvallis, Oregon, USA, June 13-17, 2011.

Book Chapters

M Rababah, FM Al-Oqla, "Biopolymer Composites and Sustainability", Advanced Processing, Properties, and Applications of Starch and Other Bio-Based Polymers, Elsevier, pp. 1 10, 2020

FM AL-Oqla, M Rababah, "Challenges in design of nanocellulose and its composites for different applications", Cellulose-Reinforced Nanofibre Composites, Woodhead publishing, pp. 113-127, 2017.

REFERENCES:

Upon request.