

# Curriculum Vitae 2022

## Prof. Ali M. Alsamhan

B.Sc. in Mechanical Engineering  
M.Sc. in Mechanical Engineering  
Ph.D. Manufacturing and Mechanical Engineering

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### Professional Experience

<b>Present</b>	<b>Professor, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>2012</b>	<b>Associated Professor, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>2006</b>	<b>Assistant Professor, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>2006</b>	<b>Assistant Professor, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>1999</b>	<b>Lecturer, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>1999</b>	<b>Lecturer, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>1992</b>	<b>Demonstrator, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>1992</b>	<b>Demonstrator, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia
<b>1986</b>	<b>Demonstrator, Industrial Engineering, College of Engineering,</b> King Saud University, Riyadh, Saudi Arabia

### Teaching duties

<b>IE252 (BSc.)</b>	<b>Manufacturing Processes 1 (Metal Forming Processes)</b>
<b>IE337 (BSc.)</b>	<b>Automatic control</b>
<b>IE653 (PhD.)</b>	<b>Advances in Automation of Manufacturing Systems</b>
<b>IE654(PhD.)</b>	<b>Advanced Topic in Manufacturing Processes</b>
<b>IE557 (MSc.)</b>	<b>Advance Manufacturing Processes</b>

### Administrative duties

<b>2018- 2022</b>	<b>Chairman Industrial Engineering Department</b>
<b>2015-2016</b>	<b>Vice Dean Scientific Research of quality and development</b>
<b>2012-2014</b>	<b>Chairman Industrial Engineering Department</b>
<b>200-2005</b>	<b>Student registration supervisor</b> <b>Automation Laboratory supervisor and director.</b> <b>Member of Industrial Engineering council.</b> <b>Member of College of Engineering council</b>

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## Industrial Experience and Laboratory development at KSU

- Director/Research and Development (R&D) for Alsamhan Factory for Saudi Pump Co., Ltd., Riyadh-Saudi Arabia, of electric driven water pump and electric motors products since 1992. Developing more than 40 products for Saudi Market. [www.alsamhanpump.com.sa](http://www.alsamhanpump.com.sa) . Maintain and troubleshooting industrial machinery e.g. cnc machines and assembly machines with PLC controller. Developing custom made oil filling machinery for Saudi industry.
- Consultant for Saudi cast (Foundry) 2 year.
- Member of SASO committees 2017-2018.
- Siemens certified Training for Automation Systems and Drives Technology SIMATIC S7 TIA (ST-Pro1) 23/2/2011.
- Siemens certificate Training for Automation Systems and Drives Technology SIMATIC WinCC System Course (ST-BWINCCS) 23/2/2011.
- Development of Manufacturing Automation PLC laboratory with Lab teaching material at KSU, Industrial Engineering Department by assemble 5 teaching stations with Siemens equipment and pneumatic actuators.

## Education Background

**13July1999** **Ph. D. in manufacturing and mechanical engineering.**  
Birmingham University, UK.

**18July1992** **M. Sc. in Mechanical engineering.**  
King Saud University, Riyadh, Kingdom of Saudi Arabia.

**14May1986** **B. Sc. in Mechanical engineering.**  
King Saud University, Riyadh, Kingdom of Saudi Arabia

## Patent and Awards

- "Method of friction stir spot weld, Patent US 10442029 B1, on Oct 15, 2019, Ali Mohamed Ali Alsamhan, Ahmed Nageeb Ahmed Badwelan (Output MSc student work under supervision)
- "Wave energy convertor using oscillating pendulums" Patent No US9,151,268,B1, Oct, 6, 2015, Inventors ;Hesham Rabie Fouli, **Ali M Al-Samhan**, Shkelzen Hykaj, Ermal Mullalli.
- Goldmedaille International Trade Fair Ideus-Inventions-New Product(Nurembera) 3 Nov 2012 "Drip Free Domestic Water Faucet (or Tap)"
- "Drip Free Domestic Water Faucet" Patent No 4692 dated 28 Feb 2016 from Saudi Intelligent Property.

## Research

### Research interest:

- Advance manufacturing processes based on Industry 4.0 and IoT tools.
- Experimental and numerical modeling of manufacturing processes as well as optimization process parameters..
- Research and product development.
- Improve manufacturing process operations of Nano-composite materials developed by 3D metal print.

## Supervision assistance of graduation projects

- "Experimental and Numerical Analysis of Peel Bonded Joint Strength Merged with Nano particles", by Wadea Ameen Mohammed Qaid, MSc. Industrial Engineering, College of Engineering, Aug 2014, Supervisor Dr Ali M Alsamhan and Dr S. M. Darwish.
- "A Knowledge Based Decision Support Approach to Reconfigure Manufacturing Assembly Systems", by Mabkhot, M, M. Sc. thesis, Industrial Engineering, college of Engineering, Supervisor Prof Ali M Alsamhan, December 2016.
- "Study Effect of Welding Parameters of Friction Stir Spot Welding (FSSW) on the Weld Strength and Microstructure for Aluminum Alloy Joints", Ahmed N. Badwelan, MSc thesis, Industrial Engineering, college of Engineering, Supervisor Prof Ali M Alsamhan, 2019.
- "Studying the influence of layer orientations and heat treatment during finishing of the additively manufactured components", Abdulmajeed A M Dabwan, PhD Thesis, Industrial Engineering, college of Engineering, Supervisor Prof Ali M Alsamhan, and Dr Saqib Anwar 2021.
- "Machinability Analysis of the Graphene Reinforced Nanocomposites", PhD Thesis, Industrial Engineering College of Engineering, Supervisor Prof Ali M Alsamhan and Dr Saqib Anwar 2021.

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## Funded projects

- AI-CPS: Artificial Intelligence for Cyber-Physical Systems. Research group Role: PI. Deanship of scientific research, King Saud University Grant RG-1439-56.
- Institutional Funding Program for Research and Innovation-Directed Research Articles's Program-IFKSUDR\_E109, Development of eco-friendly bio-materials and efficient and sustainable processing of medical implants required in healthcare, 2022. (12 month project)
- A Book on "Manufacturing engineering processes", By Prof. Dr Ali M Alsamhan and Prof. Dr S.M. Darwish, for the Research center of KSU, Grant 50/426. 2006.
- A Book on "Manufacturing Automation using PLCs", By Prod Dr Ali Alsamhan and Prof Dr S.M. Darwish, for the Research center of KSU, Grant 16/424, 2007

## International Journals

Year 2021-2022:

- Abdulmajeed Dabwan, Saqib Anwar, **Ali M. Al-Samhan**, Mustafa M. Nasr, Abdullah AlFaify, **On the influence of heat treatment in suppressing the layer orientation effect in finishing of electron beam melted Ti6Al4V**, The International Journal of Advanced Manufacturing Technology, 2021 <https://doi.org/10.1007/s00170-021-07995-3>. (Output PhD student)
- Lavanya Nagamalla, J.V. Shanmukha Kumar, Chintakindi Sanjay, **Ali M Alsamhan**, Mohammed Rafi Shaik, **In-silico study of seaweed secondary metabolites as AXL kinase inhibitors**, Saudi Journal of Biological Sciences 29 (2022) 689–701.
- Lavanya Nagamalla, J. V. Shanmukha Kumar, Mohammed Rafi Shaik, Chintakindi Sanjay, **Ali M. Alsamhan**, Mohsin Ahmed Kasim and Abdulrahman Alwarthan, **Identification of Novel AXL Kinase Inhibitors Using Ligand-Based Pharmacophore Screening and Molecular Dynamics Simulations**, Crystals 2022, 12, 1158. <https://doi.org/10.3390/cryst12081158>.
- Bashir Salah, **Ali M. Alsamhan**, Sajjad Khan and Mohammed Ruzayqat, **Designing and Developing a Smart Yogurt Filling Machine in the Industry 4.0 Era**, MDPI Machines 2021, 9, 300. <https://doi.org/10.3390/machines9110300>.
- Ateekh Ur Rehman, Nagumothu Kishore Babu, Mahesh Kumar Talari, Saqib Anwar, Yusuf Usmani, and **Ali M. Al-Samhan**, **Dissimilar Rotary FrictionWelding of Inconel 718 to F22 Using Inconel 625 Interlayer**, Appl. Sci. 2021, 11, 10684. <https://doi.org/10.3390/app112210684>.
- Saqib Anwar, Ateekh Ur Rehman, Yusuf Usmani and **Ali M. Al-Samhan**, **Influence of Post Weld Heat Treatment on the Grain Size, and Mechanical Properties of the Alloy-800H Rotary Friction Weld Joints**, Materials 2021, 14, 4366. <https://doi.org/10.3390/ma14164366>.
- Ibrahim M. Al-harkan, Ammar A. Qamhan , Ahmed Badwelan , **Ali Alsamhan** and Lotfi Hidri, **Modified Harmony Search Algorithm for Resource-Constrained Parallel Machine Scheduling Problem with Release Dates and Sequence-Dependent Setup Times**, Processes 2021, 9, 654. <https://doi.org/10.3390/pr9040654>.
- Abdulmajeed Dabwan , Saqib Anwar, **Ali M. Al-Samhan** , Abdullah AlFaify and Mustafa M. Nasr, **Investigations on the Effect of Layers' Thickness and Orientations in the Machining of Additively Manufactured Stainless Steel 316L**, Materials 2021, 14, 1797. <https://doi.org/10.3390/ma14071797>. (Output PhD student)
- Ahmed Badwelan, **Ali M. Al-Samhan** , Saqib Anwar and Lotfi Hidri, **Novel Technique for Enhancing the Strength of Friction StirSpot Welds through Dynamic Welding Parameters**, Metals 2021, 11, 280. <https://doi.org/10.3390/met11020280>. (Output MSc Student).
- Mustafa M. Nasr a, Saqib Anwar, **Ali M. Al-Samhan**, Hany S. Abdo, Abdulmajeed Dabwan, **On the machining analysis of graphene nanoplatelets reinforced Ti6Al4V matrix nanocomposites**, Journal of Manufacturing Processes, Volume 61, January 2021, Pages 574-589, <https://doi.org/10.1016/j.jmapro.2020.10.060> (Output PhD Student)
- Ateekh Ur Rehman, Yusuf Usmani, **Ali M. Al-Samhan** and Saqib Anwar, **Rotary Friction Welding of Inconel 718 to Inconel 600**, Metals 2021, 11, 244. <https://doi.org/10.3390/met11020244>.

Year 2020-2019:

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- Abdulmajeed Dabwan, Saqib Anwar , **Ali M. Al-Samhan** and Mustafa M. Nasr, **On the Effect of Electron Beam Melted Ti6Al4V Part Orientations during Milling**, *Metals* 2020, 10, 1172; doi:10.3390/met10091172. (Output PhD Student).
- Mustafa M. Nasr, Saqib Anwar, **Ali M. Al-Samhan**, Mageed Ghaleb, and Abdulmajeed Dabwan, **Milling of Graphene Reinforced Ti6Al4V Nanocomposites: An Artificial Intelligence Based Industry 4.0 Approach**, *Materials* 2020, 13, 5707; doi:10.3390/ma13245707 (Output PhD Student).
- Abdulmajeed Dabwan, Saqib Anwar, **Ali Al-Samhan**, **Effects of Milling Process Parameters on Cutting Forces and Surface Roughness when Finishing Ti6al4v Produced by Electron Beam Melting**, *International Journal of Mechanical and Materials Engineering*, Vol:14, No:8, 2020, (Output PhD Student).
- Atef M. Ghaleb, Husam Kaid ,**Ali Alsamhan**,Syed Hammad Mian and Lotfi Hidri, **Assessment and Comparison of VariousMCDMAApproaches in the Selection of Manufacturing Process**, *Hindawi Advances in Materials Science and Engineering* Volume 2020, Article ID 4039253, <https://doi.org/10.1155/2020/4039253>. (Output PhD Course IE 654).
- Ammar a. Qamhan , Aref ahmed , (member, iee), Ibrahim m. Al-harkan , Ahmed badwelan , **Ali m. Al-samhan** , and lotfi hidri, **An Exact Method and Ant Colony Optimization for Single Machine Scheduling Problem With Time Window Periodic Maintenance**, *IEEE Access* March 13, 2020, Digital Object Identifier 0.1109/ACCESS.2020.2977234.
- Mohammed M. Mabkhot, Sana Kouki Amri, Saber Darmoul, **Ali M. Al-Samhan** & Sabeur Elkosantini, **An ontology based multi-criteria decision support system to reconfigure manufacturing systems**, <https://doi.org/10.1080/24725854.2019.1597317>. *IIE Transactions*. 2019 (Output MSc student).
- Mohammed M. Mabkhot, Saber Darmoul, **Ali M. Al-Samhan** and Ahmed Badwelan, **A Multi-Criteria Decision Framework Considering Di\_ erent Levels of Decision-Maker Involvement to Reconfigure Manufacturing Systems**, *Machines* 2020, 8, 8; doi:10.3390/machines8010008. (PhD Course IE 654)
- **Ali Alsamhan**, Adham E. Ragab, Abdulmajeed Dabwan, Mustafa M Nasr, Lotfi Hidri, **Prediction of formation force single-point incremental sheet metal forming using artificial intelligence techniques** , *PLOS ONE* 14(8) 2019, <https://doi.org/10.1371/journal.pone.0221341> (Output PhD Course IE 654)
- Wadea Ameen, **A.M. Alsamhan**, S.M. Darwish, **Effect of overlap support characteristics on peel strength of weld-bonded joints**, *Int. J. Experimental Design and Process Optimisation*, Vol. 6, No. 1, 2019 (Output MSc student).
- Wadea Ameen, **A.M. Alsamhan** and S.M. Darwish, **Design a single overlap support plate for bonded and weld-bonded T-peel joints**, *Int. J. Design Engineering*, Vol. 9, No. 1, 2019, (Output MSc Student).
- Lotfi hidri , **Ali M. Al-samhan** , and Mohammed M. Mabkhot, **Bounding Strategies for the Parallel Processors Scheduling Problem With No-Idle Time Constraint, Release Date, and Delivery Time**, *IEEE Access* Nov 21, 2019, Digital Object Identifier 10.1109/ACCESS.2019.2954905.
- Mohammed M. Mabkhot , **Ali M. Al-Samhan**, and Lotfi Hidri, **An Ontology-Enabled Case-Based Reasoning Decision Support System for Manufacturing Process Selection**, *Hindawi, Advances in Materials Science and Engineering*, Volume 2019, Article ID 2505183, 18 pages, <https://doi.org/10.1155/2019/2505183>. (Output MSc Student).

## Old Years

- **Ali M Al-Samhan**, **Thermal-stresses in carbide-tip bonded face milling cutters**, *Journal of King Saud University – Engineering Sciences*, 24, 2, 2012, pp 85-94.
- **Ali M Al-Samhan**, **Analysis of T-Peel Weld-bonded Joint with Single Overlap Support**, *Advanced Material Research Journal*, Vol 194-196, 2011, pp 2276-2283.
- **Ali M Al-Samhan**, **Experimental and Numerical Study of Double Containment Joint having Circular Cross-section Support**, *Advanced Material Research Journal*, Vol 287-290, 2011, pp 2360-2363.
- **Ali M Al-Samhan**, **Strength Prediction of Bonded T-Peel Joint with Single Overlap Support**, *Advanced Material Research Journal*, Vol 236-238, 2011, pp 781-788.
- S.M. Darwishand **A. M. Alsamhan**, **Strength of Double Containment Joints Having Right Angle Supports**, *The Journal of Adhesion*, Vol 86, 2010, pp586-600
- S.M. Darwish, **A. M. Al-Samhan**, **Material Science and Engineering Technology**, *Optimization of Artificial Hip Joint Parameters*, Vol 40, Issue 3, 2009, pp218-223.
- S. M. Darwish, , **Al-Samhan**, **"The effect of cement stiffness and tibia tray material on the life span of artificial knee"**, *Int. J. Of Adhesion & Adhesives*, vol. 28, pp 120-125, 2008
- S. M. Darwish, **Al-Samhan**, **"The signature of cement stiffness and tibia tray material on the life span of artificial knee"**, *UMTIK Conference, Turkey*, vol.2, pp 681-690, 2006.

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- **Al-Samhan, S. M. Darwish, "Factors influencing thermo-mechanical stresses developed in bonded tools"**, Int. J. Of Adhesion & Adhesives, vol. 25, pp 379- 388, 2005.
- **S.M. Darwish and A. Al-Samhan, "Thermal stresses developed in weld-bonded joints"**, J. of Materials Processing Technology, vol. 153-154, pp 971-977, 2004.
- **A. Al-Samhan and S.M. Darwish, " Finite element modeling of weld-bonded joints"** J. of Materials Processing Technology, vol. 142, pp 587-598, 2003.
- **S.M. Darwish and A. Al-Samhan , Peel and shear strength of spot welded and weld-bonded dissimilar thickness joints** J. of Materials Processing Technology, vol. 147, pp 52-59, 2004.
- **A. Alsamhan, I. Pillinger, P. Hartely, "The development of real time re-meshing technique for simulating cold-roll-forming using FE methods**, J Material Processing Technology, 147, 2004, 1- 9.
- **A. Alsamhan, P. Hartely, I. Pillinger, "The computer simulation of cold-roll-forming using FE methods and applied real time re-meshing techniques"**, J. Material Processing Technology, 142, 2003, 102-111.
- **S.M. Darwish and A. Al-Samhan" Design rationale of weld-bonded joints"** Int. J. Of Adhesion & Adhesives, U. K., 2003.
- **S.M. Darwish and A. Al-Samhan, " Strength prediction of weld-bonded joints"**, Int. J. Of Adhesion & Adhesives, Vol. 23, pp 23-28, 2003.

## International Conferences

- **Mabkhot, Mohammed M., Alsamhan, Ali M., Darmoul, Saber (2016). An information model to support reconfiguration of manufacturing systems. 4th IFAC international conference on intelligent control and automation science**, Reims, France, June 1-3, 2016. DOI: [org/10.1016/j.ifacol.2016.07.086](https://doi.org/10.1016/j.ifacol.2016.07.086). (Output of M. Sc. Thesis).
- **Ahmed Badwelan, Moath Alatefi, Atef M. Ghaleb, Ali M. Alsamhan, Shafiq Ahmad, Implementing IoT for the Detection of Production Machine Failures**, Proceedings of the International Conference on Industrial Engineering and Operations Management Toronto, Canada, October 23-25, 2019
- **S. M. Darwish, , Al-Samhan " Parametric study on cemented hip joint)**, ACE-X2008, 2nd International conference on Advanced Computational Engineering, 2008, Spain.
- **E. Al-Bahkli, A. Al-Samhan, S.M. Darwish, "Thermal stresses of riveted and riveted-bonded joints"**, 6th Int. Congress on Thermal Stresses, Vienna University of Technology, Austria, pp 353-356, 2005