

TANVEER SALEH



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المؤهل العلمي

- Ph.D in Engineering (Mechanical)
- Master of Science (Mechatronics)
- B.Sc in Mechanical Engineering

مسؤوليات التدريس

DESIGN OF MACHINE ELEMENTS	2014/2015 2015/2016 2016/2017 2017/2018 2018/2019
ENGINEERING DESIGN	2017/2018 2018/2019 2019/2020 2020/2021
INDUSTRIAL AUTOMATION	2012/2013 2013/2014 2014/2015 2015/2016
INTERGRATED DESIGN PROJECT	2018/2019 2019/2020 2020/2021
MACHINE DESIGN	2018/2019
MECHATRONIC SYSTEM DESIGN	2015/2016
MECHATRONICS ENGINEERING LAB I	2017/2018
MECHATRONICS ENGINEERING LAB II	2012/2013 2013/2014 2014/2015 2016/2017
MECHATRONICS LAB III	2019/2020 2020/2021
MECHATRONICS SYSTEM DESIGN	2016/2017 2017/2018 2018/2019 2019/2020 2020/2021
PROJECT 1	2018/2019 2019/2020 2020/2021
Project II	2019/2020 2020/2021
Robotics	2019/2020 2020/2021
THEORY OF MACHINES AND MECHANISMS	2012/2013 2013/2014 2016/2017 2017/2018

المشاريع البحثية

In Progress

- 2020 - Present** Development of a desktop uEDM machine for microhole fabrication
- 2020 - Present** Characterization of new type of modular uEDM power supply
- 2019 - Present** Development of an Intelligent Knowledgebase for uEDM Operation
- 2019 - Present** Development of an Intelligent Knowledgebase for uEDM Operation
- 2019 - Present** Pulsed Eddy Current System Prototype for Assessment of Under-Insulation Corrosion
- 2019 - Present** Investigation on the energy saving capability of a Variable Inertia Magneto Rheological (MR) Flywheel.
- 2018 - Present** Fundamental Investigation on Laser-EDM Based Micromachining Technology (AOARD GRANT)
- 2018 - Present** Micro Hole Machining for Laser Application
- 2018 - Present** Fundamental Investigation on Laser-EDM Based Micromachining Technology
- 2018 - Present** Modeling and Experimental Investigation on Laser-micro Electro discharge machining based hybrid microfabrication process
- 2014 - Present** AUTONOMOUS SYSTEMS AND ROBOTICS RESEARCH UNIT

Completed

- 2018 - 2018** Micro Hole Machining for Laser Application
- 2018 - -1** Micro Hole Machining for Laser Application
- 2017 - 2017** Design of the 4th Axis for DT-110 Multipurpose Machinetool
- 2016 - 2019** Development of a Prototype of Carbon Nanotube based Angular Sensor
- 2014 - 2017** Development of a 3-D ?-Patterning Process for Vertically Aligned Cardon Nanotubes (VACNT) for New Types of Sensor Fabrication
- 2014 - 2016** Design and Development of Shoe-Tying Robotic Hands for Prosthetics and Humanoid Application
- 2014 - 2017** Investigation on the Effect Of "Nano-Powder" in Micro-Wire Electro-Discharge Machining (?-WEDM) Process for Fabricating Micro Actuators with Nanometric Mirror Surface
- 2013 - 2014** MEMS Based electrostatic Acutator Development for 2 x 2 Optomechanical Swithch
- 2013 - 2016** Study of Effects of Patterning Process on Carbon Nanotube(CNT) Forest Surface

- 2013 - 2016** Novel Real-Time Snatch Robbery Detection And Prediction For Smart Surveillance System
- 2013 - 2016** Parametric Investigation to Optimize Dynamic Range of Magnetorheological Damper for Prosthetic Limbs
- 2013 - 2015** Development of a BCI (Brain Computer Interface) and Shape Memory Alloy Based (SMA) Assistive Hand for Disabled People

المنشورات

Article

- 2021** [Heat-assisted \$\mu\$ -electrical discharge machining of silicon.](#) International Journal of Advanced manufacturing Technology pp.1-12
- 2019** [A review on micro-patterning processes of vertically aligned carbon nanotubes array \(VACNTs Array\).](#) Current Nanoscience , 15 (4) pp.328-353
- 2019** [Artificial neural network modelling and analysis of carbon nanopowder mixed micro wire electro discharge machining of gold coated doped silicon.](#) International Journal of Materials Engineering Innovation , 10 (4) pp.346-363
- 2019** [PDMS-based dual-channel pneumatic micro-actuator.](#) Smart Materials and Structures , 28 (11) pp.1-11
- 2019** [An ex-situ method to convert vertically aligned carbon nanotubes array to horizontally aligned carbon nanotubes mat.](#) Materials Research Express , 6 (2) pp.1-8
- 2019** [Modular robotic platform for autonomous machining.](#) International Journal of Advanced Manufacturing Technology
- 2018** [Combination of fused deposition modelling with abrasive milling for attaining higher dimensional accuracy and better surface finish.](#) IIUM Engineering Journal , 19 (2) pp.221-231
- 2018** [Optical characterization of tip bended vertically aligned carbon nanotubes array.](#) Chemical Physics Letters , 711 pp.37-41
- 2018** [Copper-cobalt thermoelectric generators: power improvement through optimized thickness and sandwiched planar structure.](#) IEEE Transactions on Electron Devices , 66 (8) pp.3459-3465
- 2018** [Towards achieving nanofinish on silicon \(Si\) wafer by \$\mu\$ -wire electro-discharge machining.](#) International Journal of Advanced Manufacturing Technology , 99 (9) pp.3005-3015
- 2018** [Editorial: Advanced nanomaterial synthesis and their applications for engineering research.](#) Current Nanomaterials , xx (xx) pp.1
- 2017** [Optical anisotropy in micromechanically rolled carbon nanotube forest.](#) Electronic Materials Letters , 13 (5) pp.442-448
- 2017** [Empirical modeling of micromechanical bending process of vertically aligned carbon nanotube forest using response surface methodology.](#) Cogent Engineering , 4 (1) pp.1-13
- 2017** [Development of localised electrochemical deposition control system for fabricating micro EDM electrode.](#) International Journal of Machining and Machinability of Materials , 19 (3) pp.260-276
- 2017** [Comparative study of conventional and magnetically coupled piezoelectric energy harvester to optimize output voltage and bandwidth.](#) Microsystem Technologies , 23 (7) pp.2663-2674
- 2017** [Concept of a programmable fixture for 3-Axis CNC.](#) International Journal of Engineering Materials and Manufacture , 2 (3) pp.49-57

- 2016** [Micro glow plasma for localized nanostructural modification of carbon nanotube forest.](#) Applied Physics Letters , 109 pp.081604-1
- 2016** [Enhancement of reflectance of densified vertically aligned carbon nanotube forests.](#) Carbon Letters , 18 pp.67-70
- 2016** [Study on micro-patterning process of vertically aligned carbon nanotubes \(VACNTs\).](#) Fullerenes, Nanotubes and Carbon Nanostructures pp.88-99
- 2016** [A hybrid machining process combining micro-EDM and laser beam machining of nickel-titanium based shape memory alloy.](#) Materials and Manufacturing Processes , 31 (4) pp.447-455
- 2016** [Investigation of anisotropic reflectance from densified arrays of vertically aligned carbon nanotube forests \(VACNTs\).](#) Chemical Physics Letters , 658 pp.343-346
- 2015** [Remote interior temperature control of parked vehicles.](#) Advanced Materials Research , 1115 pp.494-498
- 2015** [Development of a Shape Memory Alloy \(SMA\) based assistive hand.](#) Advanced Materials Research , 1115 pp.454-457
- 2015** [Experimental study on improving \$\mu\$ -WEDM and \$\mu\$ -EDM of doped silicon by temporary metallic coating.](#) International Journal of Advanced Manufacturing Technology , 78 pp.1651-1663
- 2015** [A piezoelectric based energy harvester with magnetic interactions: modelling and simulation.](#) Advanced Materials Research , 1115 pp.549-554
- 2015** [Development of an angle sensor using optical polarizer.](#) ARPN Journal of Engineering and Applied Sciences , 10 (23) pp.17416-17420
- 2014** [Enhancing \$\mu\$ -wedming \(wire electro-discharge machining\) of polished silicon wafer by conductive coating.](#) Journal of Manufacturing Technology Research , 5 (1-2) pp.1-17
- 2014** [Micropatterning polypyrrole conducting polymer by pulsed electrical discharge.](#) Macromolecular Materials and Engineering , 299 (2) pp.198-207
- 2013** [Dry micro-electro-discharge machining of carbon-nanotube forests using sulphur-hexafluoride.](#) Carbon , 52 pp.288-295
- 2013** [High-power MEMS switch enabled by carbon-nanotube contact and shape-memory-alloy actuator.](#) Physica Status Solidi (A) Applications and Materials , 210 (4) pp.631-638
- 2012** [Transforming carbon nanotube forest from darkest absorber to reflective mirror.](#) Applied Physics Letter , 101 (6) pp.061913-1
- 2011** [In-process truing for ELID \(Electrolytic In-Process Dressing\) grinding by pulsewidth control.](#) IEEE Transactions on Automation Science and Engineering , 8 (2) pp.338-346
- 2011** [Field-emission-assisted approach to dry micro-electro-discharge machining of carbon-nanotube forests.](#) Journal of Applied Physics , 110 (10)
- 2010** [Efficient dressing of the wheel in ELID grinding by controllable voltage with force feed back.](#) International Journal of Advanced Manufacturing Technology , 46 (1-4) pp.123-130
- 2010** [Development, modeling, and experimental investigation of low frequency workpiece vibration-assisted micro-EDM of tungsten carbide.](#) Journal of Manufacturing Science and Engineering , 135 (2) pp.054503-1
- 2010** [Modelling for fabrication of microelectrodes by localized electrochemical deposition for micro-electrodischarge machining.](#) Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture , 224 (11) pp.1741-1755
- 2010** [A multiprocess machine tool for compound micromachining.](#) International Journal of Machine Tools and Manufacture , 50 (4) pp.344-356

- 2008 [Development of an on-machine profile measurement system in ELID grinding for machining aspheric surface with software compensation.](#) International Journal of Machine Tools and Manufacture , 48 (7-8) pp.887-895
- 2007 [Development and performance evaluation of an ultra precision ELID grinding machine.](#) Journal of Materials Processing Technology , 192/93 pp.287-291
- Conference or Workshop Item**
- 2020 [Micropatterning of vertically aligned carbon nanotubes and its remarkable optical transformation.](#) In: **International Conference on Advancements in Mechanical Engineering**
- 2020 [Micro-patterning of CNT Forest.](#) In: **Invited Lecture**
- 2019 [Hexapod robot for autonomous machining.](#) In: **4th International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE 2018)**
- 2019 [Prototype of single degree of freedom optical resolver.](#) In: **4th International Conference on Mechanical, Automotive, and Aerospace Engineering 2018 (ICMAAE'18)**
- 2019 [Development of an active fixture for ultrasonically assisted micro electro-discharge machining.](#) In: **7th IEEE International Conference on Mechatronics Engineering - ICOM'19**
- 2019 [Development and performance evaluation of modular RC-based power supply for micro-EDM.](#) In: **7th IEEE International Conference on Mechatronics Engineering - ICOM'19**
- 2019 [Micromachining using fiber laser for various metallic workpieces.](#) In: **FEIIC - International Conference on Engineering Education and Research FICEER 2019**
- 2017 [An improved machining process of polished silicon using nano powder mixed micro-wire electro discharge machining.](#) In: **2017 World Congress on Micro and Nano Manufacturing**
- 2017 [An assistive robotic hand based on human computer interface \(HCI\) and shape memory alloy \(SMA\) actuator.](#) In: **9th International Conference on Robotic, Vision, Signal Processing and Power Applications Empowering Research and Innovation**
- 2017 [An experimental investigation on the effect of nanopowder for micro-wire electro discharge machining of gold coated silicon.](#) In: **Advances in Materials and Processing Technologies, 2016 (AMPT 2016)**
- 2017 [Improvement of dimensional accuracy of 3-D printed parts using an additive/subtractive based hybrid prototyping approach.](#) In: **6th International Conference on Mechatronics - ICOM'17**
- 2017 [Design and development of a hybrid machine combining rapid prototyping and CNC milling operation.](#) In: **Advances in Materials and Processing Technologies, 2016 (AMPT 2016)**
- 2016 [Anisotropic carbon nanotube for new type of angle sensor development.](#) In: **International Conference on Advances in Functional Materials (AFM 2016)**
- 2016 [An experimental investigation of gold coated silicon using nano powder mixed micro-wire electro discharge machining.](#) In: **Advances in Materials and Processing Technologies, 2016 (AMPT 2016)**
- 2015 [Development and performance evaluation of a linear actuator based wearable assistive device.](#) In: **2015 10th Asian Control Conference (ASCC 2015)**
- 2015 [Development and performance evaluation of a linear actuator based Wwearable assistive device.](#) In: **Asian Control Conference (ASCC 2015)**
- 2015 [Application of VACNTs in MEMS devices.](#) In: **World Congress on Microscopy: Instrumentation, Techniques and Applications in Life Sciences and Materials Sciences (WCM 2015)**
- 2015 [Optimal particle ratio to maximize the dynamic range of Magnetorheological Fluid \(MRF\) damper for prosthetic limb.](#) In: **2015 10th Asian Control Conference (ASCC 2015)**

- 2014 [Inner ambient control of the parked vehicle in a hot sunny day by remote access.](#) In: **International Research, Invention and Innovation Exhibition 2014 (IRIIE2014)**
- 2014 [Improving \$\mu\$ -wire electro-discharge machining operation of polished silicon wafer by conductive coating.](#) In: **9th International Conference on MicroManufacturing (ICOMM 2014)**
- 2014 [Micro-Mechanical Bending \(M2 B\) method for Carbon Nanotube \(CNT\) based sensor fabrication.](#) In: **Smart Instrumentation, Measurement and Applications (ICSIMA), 2014 IEEE International Conference on**
- 2014 [Piezoelectric based vibration energy harvester with tip attraction magnetic force: modeling and simulation.](#) In: **Mathematics and Computers in Science and Industry (MCSI)**
- 2013 [\$\mu\$ -Patterning of Carbon Nanotube patterning of Carbon Nanotube \(CNT\) forest for MEMS applications.](#) In: **5th International Conference on Mechatronics (ICOM'13)**
- 2013 [A new \$\mu\$ -patterning method for Carbon Nanotube \(CNT\) forest and its remarkable optical transformation.](#) In: **16th International Conference on Advances in Material and Processing Technology AMPT 2013**
- 2012 [High-precision dry micro-electro-discharge machining of Carbon-Nanotube forests with ultralow discharge energy.](#) In: **International Conference on Micro Electro Mechanical Systems (MEMS)**
- 2004 [Design of a gyroscopically stabilized single-wheeled robot.](#) In: **Conference on Robotics, Automation and Mechatronics**
- Book
Book Section**
- 2020 [ELID grinding for final finishing operation.](#) In: **Advances in Abrasive Based Machining and Finishing Processes** Springer Nature . ISBN 978-3-030-43311-6 , pp.129-145
- 2019 [Near net shape machining by Micro-EDM and Micro-WEDM.](#) In: **Micro-electrical Discharge Machining Processes Technologies and Applications** Springer . ISBN 978-981-13-3073-5 , pp.231-264
- 2017 [ELID grinding and EDM for finish machining.](#) In: **Comprehensive materials finishing** Elsevier Inc. . ISBN 978-0-12-803249-7 , pp.364-407
- 2015 [Electro-discharge machining for non-metal based fabrication process.](#) In: **Electrical Discharge machining (EDM), Types, Technologies and Applications** Nova Publishers . ISBN 9781634835985 , pp.383-424
- 2015 [Electro-discharge machining for non-metal based fabrication process.](#) In: **Electrical Discharge machining (EDM), Types, Technologies and Applications** Nova Publishers . ISBN 9781634835985 , pp.383-424
- 2014 [Electrolytic In-Process Dressing \(ELID\) grinding for nano-surface generation.](#) In: **Comprehensive materials processing** Elsevier . ISBN 9780080965321 , pp.483-522