

PERSONAL INFORMATION



Mubasher Ali (GOLDMEDALIST)

📍 Sentient Manufacturing Lab (ERB, G10), Mechanical and Automation Engineering, The Chinese University of Hong Kong

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EDUCATIONAL BACKGROUND

Sep 2021 – Present

Doctor of Philosophy in Mechanical Engineering

The Chinese University of Hong Kong

Thesis Title: **Synthesis of Micro-Micro and Nano-Micro Titanium Composite Powder with the Electrostatic Adsorption Process**

Advisor: Prof. Wong Hay

Feb 2019 – Aug 2020

Master of Engineering in Mechanical

National Taiwan University of Science and Technology (NTUST), Taipei, Taiwan

Thesis Title: **"Design and Optimization of Additively Manufactured Graded Density Helical Springs for Shoe Midsole Application"**

Advisor: Prof. Jeng-Ywan Jeng

CGPA: 4.14/4.3 (96.27%)

Sept 2014 – Sept 2018

Bachelor of Mechanical Engineering

Sarhad University of Science and Information Technology (SUIT), Peshawar, KPK, Pakistan

Thesis Title: **"Design and Fabrication of Fuel Efficient Vehicle (Body design and Fabrication)"**

Distinction: University Medal recipient for being a distinguished top of class graduate.

CGPA: 3.66/4.0 (91.5%)

RESEARCH EXPERIENCE

Nov 2020 – Aug 2021

Collaboration work

Worked with Dr. Aqeel Abbas (Post-Doc in NTU Taiwan) and Dr. Uzair Abbas (Post-Doc NYCU Taiwan) in collaboration on several topics e.g. application of lattice structures, and improving tribological properties of aluminum alloys.

Aug 2020 – Nov 2020

Research Assistant (Project-based)

High-Speed 3D Printing Research Center (HSRC) National Taiwan University of Science and Technology (Taiwan Tech), Taipei, Taiwan

I worked on two projects after graduation (research published):

1. Analyzing annealing heat treatment of additively manufactured lattice structures
2. Investigating compression and buckling properties of a novel lattice structure made using Multijet Fusion Technology, with the results published in a research publication

Feb 2019 – Aug 2020

Research Assistant (Master Student)

HSRC, Taiwan Tech, Taipei, Taiwan.

The Master's program focuses on designing and optimizing lattice cellular structures through lightweight parts and additive manufacturing techniques. The goal was to enhance mechanical properties. My role involves designing a lattice structure with graded density to optimize helical springs for shoe midsole applications.

Aug 2017 – Aug 2018

Research Assistant (Bachelor Student)

Fluid Dynamics Lab (FDB) Sarhad University of Science and IT, Peshawar, Pakistan.

I was involved with an ultra-fuel-efficient vehicle (UFE) design group in FDB. In UFE designing, my main focus was to design different airfoil shapes to decrease fuel consumption by minimizing the drag forces and performed the following tasks.

- 1: Designing of bodies
- 2: Numerical Simulation
- 3: Preparing Composites
- 4: Fabrication of Materials for Body
- Body

PUBLICATIONS & PROJECTS

Journal Publications	1. Mubasher Ali , Feng Lin, Yuanfu Tan, Zhou Su, Hay Wong, "Synthesis of Micro-Micro Titanium Composite Powder with the Electrostatic Adsorption Process" [<i>Submitted to Colloids and Surfaces; under review</i>]
	2. Mubasher Ali , Yuanfu Tan, Feng Lin, Zhou Su, Hay Wong, "Pilot Design of Experiment Study: Effect of Stirring Duration and Guest Particle Loading on Electrostatic Adsorption of Ti-6Al-4V Composite Powder Formation" [<i>Submitted to The International Journal of Advanced Manufacturing Technology; under review</i>]
	3. Yuanfu Tan, Feng Lin, Mubasher Ali , Zhou Su, Hay Wong, "Development of a novel beam profiling prototype with laser self-mixing via the knife-edge approach" [<i>pdf</i>] Optics and Laser in Engineering V 169, October 2023, 107696
	4. Mubasher Ali , Resy KumalaSari, Uzair Sajjad, Muhammad Sultan, Hafiz Muhammad Ali, "Effect of annealing on microstructures and mechanical properties of PA-12 lattice structures proceeded by multi-jet fusion technology" [<i>pdf</i>] Additive Manufacturing V 47, Nov 2021, 102285.
	5. Mubasher Ali and Aamer Nazir "Mechanical performance of additive manufactured shoe midsole designed using variable-dimension helical springs" [<i>pdf</i>] "The International Journal of Advanced Manufacturing Technology. 111, 3273–3292(2020).
	6. Aamer Nazir, Mubasher Ali , Chih-Hua Hsieh, and Jeng Ywan Jeng, "Investigation of stiffness and energy absorption of variable-dimension helical springs fabricated using multijet fusion technology" [<i>pdf</i>] "The International Journal of Advanced Manufacturing Technology. 110, 2591–2602(2020)
	7. Aamer Nazir, Mubasher Ali , Jeng-Ywan Jeng, "Investigation of Compression and Buckling Properties of a Novel Surface-Based Lattice Structure Manufactured Using Multi Jet Fusion Technology" [<i>pdf</i>] Materials 2021, 14(10), 2599.
	8. Uzair Sajjad, Imtiaz Hussain, Naseem Abbas, Mubasher Ali , "Artificial Intelligence for the Prediction of the Thermal Performance of Evaporative Cooling Systems" [<i>pdf</i>] Energies 2021, 14(13), 3946
	9. Mubasher Ali , Uzair Sajjad, Imtiaz Hussain, Naseem Abbas, Chi-Chuan Wang, "On the assessment of the mechanical properties of additively manufactured lattice structures" [<i>pdf</i>] "Engineering Analysis with Boundary Elements 2022, Vol 142, Page 93-116
	10. Uzair Sajjad, Tauseef-ur Rehman, Mubasher Ali , Cheol Woo Park, Wei-Mon Yan, "Manufacturing and potential applications of lattice structures in thermal systems: A comprehensive review of recent advances" [<i>pdf</i>] "International Journal of Heat and Mass Transfer 2022, Vol 198, 123352
PATENT	1. Inventor: Aamer Nazir, Jeng-Ywan Jeng, Mubasher Ali "Shoe midsole with variable dimension helical spring made by additive manufacturing process" [<i>pdf</i>] US No: 17093573, Dec 2022
Conference	1. i3D printing-2020 Webinar: My presentation topic was: "Additive Manufactured Graded Density Helical Spring Application for Shoe Midsole". (Certificate Proof is available)
Research Projects	1. Graded Density Midsole of Helical Spring for the Therapeutic Patient: My contribution to this project was to design and numerically investigate graded density helical springs for the application of the shoe midsole.
PERSONAL SKILLS	<ul style="list-style-type: none"> Python (initial), Arduino, ANSYS 19 (static structural), Creo-Engineering 8.0, SOLIDWORK-19, AutoCAD 16, Autodesk Netfabb 19, HPSmartStream3D, Simplify 3D, Origin 8.5, Result analysis: SEM, Corrosion Testing, Microstructure Characterization, FTIR, TEM. Gained skills to operate different 3D printers of additive manufacturing during Master's degree research: HP Multijet Fusion 4200, Fused Deposition Modelling (FDM), Lisa Laser Sintering machine
INTERNSHIP	<ul style="list-style-type: none"> 2 Month Internship at Water Chiller Plant: My work was to look after all the chiller temperature, water suction machine, and diffuser maintenance. Along with these responsibilities, I was also responsible for the maintenance of Air Handling Units. Topic: Additive Manufacturing Application for Ergonomic Design and Work System: I have presented this presentation online at the Universitas Pahlawan Tuanku Tambusai, Indonesia (certificate proof is available).
Speaking at International Level	

HONOURS AND AWARDS

Chinese University Graduate Studentship
NTUST Research scholarship
Sarhad Semester Scholarship

- The Chinese University of Hong Kong, **graduate studentship** for four years of Ph.D. research
- National Taiwan University of Science and Technology (NTUST) awarded with a fully funded **NTUST Scholarship** for a Master of Engineering Degree.
- Sarhad University of Science and Information Technology (SUIT) was awarded three times with a **semester fee refundable scholarship** for a Bachelor of Engineering Degree.

University Medal

REFERENCES

- Sarhad University of Science and Information Technology awarded **Campus Medal** for being top of class graduate with a Bachelor of Engineering Degree.
- 1. **Prof.** Dept. of Mechanical and Automation Engineering, CUHK, China
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