

Hussein Kommur Mohmoud Dalfi

حسين كمر محمود شناوه الدلفي

Assistant Professor

CONTACT

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EDUCATION

(14-10-2018) دكتوراه
Composite Materials
University of Manchester

RESEARCH METRICS

h-index (Scopus)	0
h-index (GS)	13
Citations (Scopus)	0
Citations (GS)	572
Documents (Scopus)	0
Documents (GS)	46

RESEARCH INTERESTS

• I am interesting in the Composite Materials experimentally and numerically

PROFILE

Hussein Dalfi is a lecturer of Material Engineering at Mechanical Department/ College of Engineering / Wasit's University. He obtained his PhD from School of Material, University of Manchester in 2018. Prior to joining Wasit University in 2006, he finished his B.Sc. and M.Sc. studying in Material Engineering from Babylon University in 1998 and 2002 respectively.

Hussein's research interests are mainly focussed on toughening of polymer composites by using hybridisation and fibre architecture, aiming to gain a sound scientific understanding of their influence on the damage tolerance of composite laminates, whilst also creating advanced polymer composites with controllable morphologies and properties for a variety of applications including healthcare, energy and general engineering. To achieve these aims, his research takes a holistic approach, such as yarns-level hybridisation, weaving different types of fabrics (i.e. 2D and 3D) functionalisation by using qausi- and dynamics testing, manufacturing processing, characterisation damage failures occurred from testing by using optical microscopy and SEM investigation. His current research activities cover the following topics:

• Manufacturing textile preforms (i.e. UD, 2D and 3D preforms).
• Investigation behaviour of textile preforms
• Producing textile composite materials using vacuum bagging process.
• Investigation mechanical properties of textile composite materials.
• Damage tolerance of textile composite laminates.
• Flexural and Residual flexural strength of composite material
• Characterisation and detection damage failures using destructive and non-destructive scanning tests.
• Tailoring performance of composite using balancing between in-plane properties and impact loading.

ACADEMIC TITLES

2021-10-14 Assistant Professor

TEACHING EXPERIENCE

Lecturer
University of Wasit/ College of Engineering/ Mechanical Department
2006-12 - Present

COURSES

• Mechanical Drawing (Second Stage)

PUBLICATIONS (46)

1. Investigation of the compression behaviour of Nomex Honeycomb sandwich structures with Typha Fibre and glass laminate skins
Engineering Research Express, 2026 | 2026

2. The effect of notches on the mechanical properties and damage failures of fibre-metal laminates: an experimental and numerical study
Proceedings of the Institution of Mechanical Engineers, Part L: Journal of ..., 2026 | 2026 | Cited: 5

3. **Experimental and Numerical Investigation of Mechanical Properties of Sandwich Composite Structures: Effects of Skin Architectures**
Iranian Journal of Science and Technology, Transactions of Mechanical ..., 2026 | 2026 | Cited: 2

4. **Mechanical strength and vibration - Damping characteristics of 2D and 3D glass woven composites with graphene nanoparticles**
Journal of Composite Materials | 2026 | Cited: 1

5. **Experimental and numerical investigation of low-velocity impact response of bouligand carbon/epoxy composites**
Journal of Reinforced Plastics and Composites, 07316844261452812, 2026 | 2026

6. **Influence of hybridization and fibre architecture on the translaminar fracture toughness of woven composite laminates**
Journal of Composite Materials, 00219983261434766, 2026 | 2026

7. **Effect of displacement rate and additive materials on the mechanical performance of 3D glass composite laminates**
Proceedings of the Institution of Mechanical Engineers, Part E: Journal of ..., 2026 | 2026

8. **Investigating the Mechanical, Physical and Biological Properties of PMMA/TiO2 Composites with Nanoclay for Denture Applications**
Engineering Transactions 73 (1), 29-43, 2025 | 2025 | Cited: 3

9. **Influence of silicon nanosheet (SiNS) on the toughness of biphasic calcium phosphate (BCP) composites**
Fracture and Structural Integrity 19 (72), 137-147, 2025 | 2025 | Cited: 2

10. **Effect of core hybridization on the mechanical performance of sandwich composites**
Journal of Industrial Textiles 55, 15280837251321137, 2025 | 2025 | Cited: 3

11. **Enhancing the mechanical and biological properties of artificial bone regeneration with functionally graded ceramics**
Physica Scripta 100 (7), 075944, 2025 | 2025 | Cited: 2

12. **Improving The Mechanical and Electrical Performance Of Composite Laminates By Including Nano-particles**
Wasit Journal of Engineering Sciences 13 (2), 14-36, 2025 | 2025

13. **Compressive Performances of 3D-bio-inspired Auxetic Metamaterials: Design and Experiments**
Thin-Walled Structures, 114355, 2025 | 2025 | Cited: 33

14. **Experimental and numerical study on failure mechanisms of sandwich composite structure: Effect of auxetic core**
Proceedings of the Institution of Mechanical Engineers, Part L: Journal of ..., 2025 | 2025 | Cited: 13

15. **Enhancement of mechanical, physical, and electrical performances of epoxy composites by inclusion nano-particles: A review**
Journal of Composite Materials 59 (29), 3321-3351, 2025 | 2025 | Cited: 13

16. **Effect of nanofillers on the Mechanical Performances and Self-healing of Composite laminates: Article Review**
Wasit Journal of Engineering Sciences 13 (4), 25-44, 2025 | 2025

17. **A comprehensive review on electrospinning: mechanisms, functional modifications and the importance of nanofiber systems**
International Journal of Nanoscience 24 (06), 2530002, 2025 | 2025 | Cited: 14

18. **Influence of fibre architectures on the mechanical properties and damage failures of composite laminates**
Journal of Failure Analysis and Prevention 24 (4), 1906-1915, 2024 | 2024 | Cited: 8

19. **Studying the influence of micro-particles on the mechanical performance and damage failures of composite laminates**
Journal of Industrial Textiles 54, 15280837241275018, 2024 | 2024 | Cited: 4

20. **Reinforcement effects on the mechanical properties of prosthesis sockets made of composite laminates**
AIP Conference Proceedings 3091 (1), 030001, 2024 | 2024

21. **Effect of thermoplastic particles on the mechanical performance and damage failure of notched fibre metal laminates**
Journal of Reinforced Plastics and Composites | 2024 | Cited: 2

22. **The effect of hybridisation reinforcement on the mechanical and physical properties of under-knee prosthesis sockets made of composite laminates**
AIP Conference Proceedings 3091 (1), 030002, 2024 | 2024

23. **Experimental and Numerical Stress-Strain Analyses of Conventional and Intricate Shapes of LCS (1008-AISI) Sheet Metal Under Deep Drawing Operation**
Strength of Materials 56 (3), 617-627, 2024 | 2024

24. **Enhancing the fire-resistance performance of composite laminates via multi-scale hybridisation: A review**
Journal of Industrial Textiles 54, 15280837241226988, 2024 | 2024 | Cited: 20

25. **Out-of-plane compressive properties of a butterfly-shaped auxetic metamaterial**
Smart Materials and Structures 33 (11), 115031, 2024 | 2024 | Cited: 42

26. **Radial clearance influence on strain and stress distribution of the polygonal shape deep-drawing operation**
Advances in Mechanical Engineering 16 (2), 16878132241232836, 2024 | 2024

27. **Experimental and numerical study on redrawing cylindrical products to polygon shapes**
Strength of Materials 55 (2), 330-339, 2023 | 2023 | Cited: 3

28. **Enhancing the mechanical performance of notched glass/epoxy composite laminates via hybridisation with thermoplastic fibres**
Journal of Composite Materials 57 (23), 3703-3721, 2023 | 2023 | Cited: 12

29. **Piezoresistive response of carbon nanotube and carbon fiber/epoxy composites under cyclic loading**
Journal of Composite Materials 57 (12), 2059-2074, 2023 | 2023 | Cited: 6

30. **Improving the impact resistance and damage tolerance of fibre reinforced composites: A review**
Journal of Composite Materials 57 (28), 4479-4500, 2023 | 2023 | Cited: 44

31. **Optimization of the mechanical performance and damage failure characteristics of laminated composites based on fiber orientation**
Frontiers of Structural and Civil Engineering 17 (9), 1357-1369, 2023 | 2023 | Cited: 19

32. **Enhancing the quasi-static strength of prosthetic socket made from composite laminates via hybridisation: Experimental and numerical study**
Journal of Industrial Textiles 53, 15280837231178567, 2023 | 2023 | Cited: 3

33. **Effect of intra-yarn hybridisation and fibre architecture on the impact response of composite laminates: experimental and numerical analysis**
Proceedings of the Institution of Mechanical Engineers, Part C: Journal of ..., 2022 | 2022 | Cited: 15

34. **Influence of nanoparticles reinforcements on the mechanical performance and tribological properties of aluminum 6082 alloys**
Engineering Transactions 70 (4), 391-405, 2022 | 2022 | Cited: 6

35. **Improving the mechanical performance and impact damage tolerance of glass composite laminates via multi-scales of hybridisation**
Proceedings of the Institution of Mechanical Engineers, Part L: Journal of ..., 2022 | 2022 | Cited: 18

36. **Improving the fracture toughness of glass/epoxy laminates through intra-yarns hybridisation**
Proceedings of the institution of mechanical engineers, part l: journal of ..., 2022 | 2022 | Cited: 14

37. **Influence of yarn-hybridisation on the mechanical performance and thermal conductivity of composite laminates**
Journal of Industrial Textiles 51 (3_suppl), 5086S-5112S, 2022 | 2022 | Cited: 7

38. **Investigation of the impact and post-impact behaviour of glass and glass/natural fibre hybrid composites made with various stacking sequences: Experimental and theoretical analysis**
Journal of Industrial Textiles 51 (8), 1264-1294, 2022 | 2022 | Cited: 57

39. **Influence of yarn hybridisation and fibre architecture on the compaction response of woven fabric preforms during composite manufacturing**
Journal of Industrial Textiles 51 (3_suppl), 5062S-5085S, 2022 | 2022 | Cited: 10

40. **The role of hybridisation and fibre architecture on the post-impact flexural behaviour of composite laminates**
Journal of Composite Materials 55 (11), 1499-1515, 2021 | 2021 | Cited: 29

41. **Experimental and theoretical study of sandwich composites with Z-pins under quasi-static compression loading**
Advances in Structural Engineering 24 (12), 2720-2734, 2021 | 2021 | Cited: 9

42. **Effect of twist level on the mechanical performance of S-glass yarns and non-crimp cross-ply composites**
Journal of Industrial Textiles, 1528083720987206, 2021 | 2021 | Cited: 23

43. **The influence of the inter-ply hybridisation on the mechanical performance of composite laminates: Experimental and numerical analysis**
Science Progress 104 (2), 00368504211023285, 2021 | 2021 | Cited: 29

44. **Towards balancing in-plane mechanical properties and impact damage tolerance of composite laminates using quasi-UD woven fabrics with hybrid warp yarns**
Composite Structures 225, 111083, 2019 | 2019 | Cited: 68

45. **Intra–laminar toughening mechanisms to enhance impact damage tolerance of 2D woven composite laminates via yarn–level fiber hybridization and fiber architecture**
Polymer Composites 40 (12), 4573-4587, 2019 | 2019 | Cited: 48

46. **Damage Tolerance of Composite Laminate Toughened via Yarn-level Hybridisation and New Fibre Architecture**
University of Manchester, 2018 | 2018 | Cited: 1