

Academic Staff CV

Personal information:

Name: Wessam Al Azzawi
Place and date of birth: Iraq / Baghdad 7/3/1974
Nationality: Iraqi
Degree: PhD
Field: Mechanical Engineering
Specialty: Applied mechanicals / Composite materials
Languages: Arabic and English
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Qualifications:

- PhD. Mechanical Engineering / Applied Mechanics / College of Electrical and Mechanical Engineering / University of Southern Queensland / Australia - 2019.
- MSc. Mechanical Engineering / Applied Mechanics / College of Engineering / University of Baghdad / 1998.
- BSc. Mechanical Engineering / Aeronautic section / College of Engineering / University of Baghdad / 1995.

Expertise:

- Academic staff member at Materials Engineering Dept. / College of Engineering / University of Diyala since 2018 till present.
- Academic staff member at the Electrical Power Engineering Dept. / College of Engineering / University of Diyala, 2005-2013.
- Technical manager at the Modern Co. / Republic of Yemen, 2001-2009.
- Head of the postgraduate section at the University of Diyala / Engineering College since 2019 till present.

- Member of the Australian Nanotechnology organization (ANN)
- Head of the Scholarships and Cultural Relationships section at the University of Diyala / Engineering College since 2010 – 2013.
- Reviewer of many local and foreign peer reviewed journals.
- Member of the examination committee at the Power Engineering and Materials Engineering Depts. / at the Materials Engineering Dept. / College of Engineering / University of Diyala.
- Member of the Quality committee at the Materials Engineering Dept. / College of Engineering / University of Diyala.
- Chair of the Web site committee at the Materials Engineering Dept. / College of Engineering / University of Diyala.
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Subjects that have been taught:

- Engineering Mechanics (static and dynamic)
- Applied Mathematics
- Theory of Machines
- Composite Materials
- Graduation projects
- Advanced Composite Materials (Postgraduate)
- Supervision of many undergraduate and postgraduate students.
- Provided many training courses in different engineering fields.

Publications:

1. Thesis

- PhD thesis submitted to USQ / Australia

Development of Fibre Reinforced Shape Memory Polymer Composites (SMPCs) for Morphing Structures and Finite Element Modeling of Shape Memory Behaviour of the SMPCs

- Master thesis submitted to the college of Engineering / University of Baghdad

Static and dynamic behavior of orthotropic laminated plates subjected to general loading conditions

2. Books contribution

- **Book chapter** “*Shape Memory Polymers and Their Applications*” in **book** “*Structural Health Monitoring Technologies and Next-Generation Smart Composite Structures*”
- **Book chapter** “*Modelling, Analysis and Testing of Viscoelastic Properties of Shape Memory Polymer Composites (SMPCs) and a Brief Review of Their Space Engineering Applications*” in **book** “*Creep and Fatigue in Polymer Matrix Composite*”

3. Journals publications

- Al Azzawi, W., Islam, M.M., Leng, J., Li, F. and Epaarachchi, J.A., 2017. *Quantitative and qualitative analyses of mechanical behavior and dimensional stability of styrene-based shape memory composites*. Journal of Intelligent Material Systems and Structures, 28(20), pp.3115-3126
- Al Azzawi, W., Epaarachchi, J.A., Islam, M. and Leng, J., 2017. Implementation of a finite element analysis procedure for structural analysis of shape memory behaviour of fibre reinforced shape memory polymer composites. Smart Materials and Structures, 26(12), p.125002.
- Al Azzawi, W., Epaarachchi, J.A. and Leng, J., 2018. Investigation of ultraviolet radiation effects on thermomechanical properties and shape memory behaviour of styrene-based shape memory polymers and its composite. Composites Science and Technology, 165, pp.266-273.
- Herath, H.M.C.M., Epaarachchi, J.A., Islam, M.M., Al-Azzawi, W., Leng, J. and Zhang, F., 2018. Structural performance and photothermal recovery of carbon fibre reinforced shape memory polymer. Composites Science and Technology, 167, pp.206-214.

- Azzawi, Wessam Al. "Development and performance evaluation of a morphing wing design using shape memory polymer and composite corrugated structure." *Australian Journal of Mechanical Engineering* (2022): 1-15.
- Mohammed, A. A., Haris, S. M., & Al Azzawi, W. (2020). Estimation of the ultimate tensile strength and yield strength for the pure metals and alloys by using the acoustic wave properties. *Scientific reports*, 10(1), 1-12.

Conferences

- Al Azzawi, W., Epaarachchi, J.A. and Leng, J., Evaluating the temperature and glass fibre reinforcement effects on the damping properties of the shape memory polymers, 21st International Conference on Composite Materials Xi'an, 20-25th August 2017
- Herath, M., Al-Azzawi, W., Epaarachchi, J., Islam, M., Robertson, S., Leng, J. and Zhang, F., 2018, February. Thermo-mechanical behaviour and shape memory characteristics of carbon fibre reinforced epoxy. In 2018 International Conference on Nanoscience and Nanotechnology Poster Session Abstracts (ICONN 2018). International Conference on Nanoscience and Nanotechnology.
- Mohammed, A. A., & Al Azzawi, W. (2021, February). Drawing the Tensile Curve for Pure Metals and Alloys Depending On Crystal Structure and Acoustic Impedance. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1076, No. 1, p. 012084). IOP Publishing.
- KADHIM, Hala M., et al. Evaluation of the Mechanical Characteristics of Hybrid Nanocomposite Materials (TiO₂-SiO₂-ZrO₂). In: *IOP Conference Series: Materials Science and Engineering*. IOP Publishing, 2021. p. 012083.