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|  | **Safaa Kh. Al-Jumail** | C:\Users\safaa kh\Documents\Scan\Scan0018.jpg |
|  | Lecturer in Materials Engineering Department, College of Engineering, University of Basrah, Basrah, Iraq |
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| **Education:** |
| 2016, PhD from University of Cardiff, U.K  [**Thesis**](https://en.wikipedia.org/wiki/Thesis) **title:** Damage assessment in complex structures using acoustic emission |
| 2003, M.Sc. from College of Engineering, University of Basrah, Basrah, Iraq  [**Thesis**](https://en.wikipedia.org/wiki/Thesis) **title:** Fracture mechanics analysis of welding joints using boundary element method with sub region technique. |
| 2000, B.Sc. from College of Engineering, University of Basrah, Basrah, Iraq |

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| **Experience** | |
| **Teaching experience:** | Theory of Machines and Application (Third Stage).  Theory of Vibration Application (Third Stage).  Mechanical Drawn (Second Stage). |
| **Skills:** | English, Arabic |
| **Languages** |
| **Computer languages** | Matlab |
| **Award /Memberships** | * Member in Royal Aeronautical Society, UK * Member in Newport & District Materials Society, UK * Member in the Institute of Materials, Minerals and Mining IOM3, UK * Member in the UK Association for Computational Mechanics (UKACM) * Member in the European Working Group on Acoustic Emission (EWGAE) |
| **Interested research areas** | 1. Damage Identification: Damage detection in machinery and structures including smart structures i.e. Condition monitoring, Structural health monitoring. Experimental, Computational and Theoretical. 2. Damage Localization: Locate damage within simple and complex structures using traditional and high level SHM techniques. 3. Pattern Recognition: Algorithms for damage identification including: Neural Networks, Statistical pattern recognition, Genetic Algorithm. 4. Multivariate Statistics: Algorithms for damage identification including: outlier analysis and Principal Component Analysis. 5. Advanced Signal Processing: Feature selection methods for damage identification and nonlinear system identification for time and frequency-domain analysis and wavelet analysis. 6. Sensor Technology: PZT sensor and transducers devices for Structural Health Monitoring (SHM) applications and smart sensor for NDT technique. 7. Advanced Material: Hydbrid Composite, Composite Design and Testing, and Functionally Graded Material (FGM). |
| **Skills** | Acoustic Emission, Composite Material, Mechanical Engineering, Composites, Damage Mechanics Characterisation, Structural Health Monitoring, Composite Structures, Acoustic Signal Processing, Data Clustering, Classification, NDT, Ultrasonics, Feature Selection, Waves, Cluster Analysis, Feature Extraction, Pattern Recognition, Supervised Learning, Pattern Classification, Artificial Neural Networks, Mechanical Properties, Mechanical Behavior of Materials |

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| Publications |
| Journals |
| 1. Al-Jumaili, S.K., Pearson, M.R., Holford, K.M., Eaton, M.J. and Pullin, R., 2016. Acoustic emission source location in complex structures using full automatic delta T mapping technique. *Mechanical Systems and Signal Processing*. [Volumes 72–73](http://www.sciencedirect.com/science/journal/08883270/72/supp/C), May 2016, Pages 513–524. 2. Al-Jumaili, S.K., Holford, K.M., Eaton, M.J. and Pullin, R., 2015. Parameter Correction Technique (PCT): A novel method for acoustic emission characterisation in large-scale composites. *Composites Part B: Engineering*, *75*, pp.336-344. 3. Crivelli, D., Guagliano, M., Eaton, M., Pearson, M., Al-Jumaili, S., Holford, K. and Pullin, R., 2015. Localisation and identification of fatigue matrix cracking and delamination in a carbon fibre panel by acoustic emission. *Composites Part B: Engineering*, *74*, pp.1-12. 4. McCrory, J.P., Al-Jumaili, S.K., Crivelli, D., Pearson, M.R., Eaton, M.J., Featherston, C.A., Guagliano, M., Holford, K.M. and Pullin, R., 2015. Damage classification in carbon fibre composites using acoustic emission: A comparison of three techniques. *Composites Part B: Engineering*, *68*, pp.424-430. 5. Al-Jumaili, S.K., Holford, K.M., Eaton, M.J., McCrory, J.P., Pearson, M.R. and Pullin, R., 2015. Classification of acoustic emission data from buckling test of carbon fibre panel using unsupervised clustering techniques. *Structural Health Monitoring*, *14*(3), pp.241-251. |
| Conference Proceedings |
| Davide Crivelli, Stefano Miccoli, Ben Cahill, Safaa Al - Jumaili, Alastair Clarke, Rhys Pullin: *Data reduction for Structural Health Monitoring based on Chebyshev moments and wavelet transforms*. 11th International Conference on Advances in Experimental Mechanics, Exeter, United Kingdom; 09/2016Safaa Kh. Al-jumaili, Matthew Robert Pearson, Karen M Holford, M. J. Eaton, Rhys Pullin, 2016. *Fast and Reliable Acoustic Emission Source Location Technique in Complex Structures*. the 24th UK Conference of the Association for Computational Mechanics in Engineering, Cardiff, UK; 03/2016.  1. Al-Jumaili, S.K., Eaton, M.J., Holford, K.M., McCrory, J. and Pullin, R., 2014. Damage characterisation in composite materials under buckling test using acoustic emission waveform clustering technique. *The 53rd Annual Conference of The British Institute of Non-Destructive Testing*, Manchester, UK, 9 - 11 September 2014. 2. Al-Jumaili, S.K., Eaton, M., HOLFORD, K. and PULLIN, R., 2014. A Parameter Correction Technique (PCT) for acoustic emission characterisation in large-scale composites. In *31st conference of the European working Group on acoustic emission (EWGAE)*. 3. McCrory, J., Al-Jumaili, S.K., Pearson, M., Eaton, M., HOLFORD, K. and PULLIN, R., 2014. Automated corrected MAR calculation for characterisation of AE signals. In *31st conference of the European working Group on acoustic emission (EWGAE)*. 4. Crivelli, D., Guagliano, M., McCrory, J., Al-Jumaili, S.K., Eaton, M.J. and Pearson, M.R., 2013. Classification of acoustic emission data from Buckling Test of carbon fiber panel using neural networks. 3rd European Aeronautics Science Network Workshop on Aerostructures, Politechnico di Milano; 10/2013. |