



Fig. 3. The out-of-plane displacement of the three sandwich panels measured using DIC.



Professor John P. Dear

From: John P. Dear, Emily Rolfe, Mark Kelly, Hari Arora and Paul A. Hooper, “Blast performance of composite sandwich structures, *Procedia Engineering*, Vol. 173, pp 471-478, 2017

See:

<https://www.imperial.ac.uk/people/j.dear/publications.html>

<http://www.imperial.ac.uk/people/j.dear>

<https://uk.linkedin.com/in/john-dear-016742118>

https://www.researchgate.net/profile/J_Deare

Department of Mechanical Engineering
Imperial College London

Summary:

John has been an academic for over 30 years in the Mechanics of Materials Division of the Department of Mechanical Engineering and is a Professor of Mechanical Engineering. Prior to joining Imperial in 1988, John was an SERC Research Fellow at the Cavendish Laboratory, Cambridge University where he did his first degree and PhD.

John has been successful in obtaining research grants from the UK and US Government (EPSRC, ONR, MRC & DTI/TSB), European Commission, UK and overseas companies. He is Director of the BIAM Centre, at Imperial College London and Executive Joint Director of the AVIC Centre, at Imperial College London. His research expertise is structural integrity of materials including manufacturing and micro-structural effects. He is Associate Editor of the International Journal of Lightweight Materials and Manufacture. He has published 338 journal and conference papers; contributed to 17 books, supervised 63 PhDs and 22 RAs. Examples include: impact performance of aerospace and automotive components, blast performance of laminated glass facades and composite structures, creep life of materials in power-station plant, water distribution plant and high-strain rate properties of polymers, composites and a wide range of other materials for defence applications and also for medical research.

John is currently Head of the Composites, Adhesives and Soft Solids (CASS) Group.

Selected Publications:

- Domun N, Kaboglu C, Paton KR, Dear JP, Liu J, Blackman BRK, Liaghat G, Hadavinia H, 2019, Ballistic impact behaviour of glass fibre reinforced polymer composite with 1D/2D nanomodified epoxy matrices, *Composites Part B - Engineering*, Vol:167, ISSN:1359-8368, Pages:497-506
- Liu H, Falzon BG, Li S, Tan W, Liu J, Chai H, Blackman BRK, Dear JP, 2019, Compressive failure of woven fabric reinforced thermoplastic composites with an open-hole: An experimental and numerical study, *Composite Structures*, Vol:213, ISSN:0263-8223, Pages:108-117
- Zhang X, Mohammed IK, Zheng M, Nan W, Mohagheghian I, Zhang G, Yue Y, Dear JP, 2019, Temperature effects on the low velocity impact response of laminated glass with different types of interlayer materials, *International Journal of Impact Engineering*, Vol:124, ISSN:0734-743X, Pages:9-22
- Samieian M, Cormie D, Smith D, Wholey W, Blackman B, Dear J, Hooper P, Prediction of blast response in laminated glass, *Engineering Structures*, ISSN:0141-0296
- Kaboglu C, Yu L, Mohagheghian I, Blackman BRK, Kinloch AJ, Dear JP, 2018, Effects of the core density on the quasi-static flexural and ballistic performance of fibre-composite skin/foam-core sandwich structures, *Journal of Materials Science*, Vol:53, ISSN:0022-2461, Pages:16393-16414
- Del Linz P, Liang X, Hooper PA, Arora H, Pascoe L, Smith D, Cormie D, Dear JP, 2018, A numerical method for predicting the deformation of crazed laminated windows under blast loading, *Engineering Structures*, Vol:172, ISSN:0141-0296, Pages:29-40
- Mohagheghian I, Charalambides MN, Wang Y, Jiang L, Zhang X, Yan Y, Kinloch AJ, Dear JP, 2018, Effect of the polymer interlayer on the high-velocity soft impact response of laminated glass plates, *International Journal of Impact Engineering*, Vol:120, ISSN:0734-743X, Pages:150-170
- Rolfe E, Kaboglu C, Quinn R, Hooper PA, Arora H, Dear JP, 2018, High Velocity Impact and Blast Loading of Composite Sandwich Panels with Novel Carbon and Glass Construction, *Journal of Dynamic Behavior of Materials*, Vol:4, ISSN:2199-7446, Pages:359-372
- Rolfe E, Quinn R, Sancho A, Kaboglu C, Johnson A, Liu H, Hooper PA, Dear JP, Arora H, Blast resilience of composite sandwich panels with hybrid glass-fibre and carbon-fibre skins, *Multiscale and Multidisciplinary Modeling, Experiments and Design*, ISSN:2520-8160
- Rolfe E, Kelly M, Arora H, Hooper PA, Dear JP, 2017, Failure analysis using X-ray computed tomography of composite sandwich panels subjected to full-scale blast loading, *Composites Part B - Engineering*, Vol:129, ISSN:1359-8368, Pages:26-40
- Del Linz P, Hooper PA, Arora H, Wang Y, Smith D, Blackman BRK, Dear JP, 2017, Delamination properties of laminated glass windows subject to blast loading, *International Journal of Impact Engineering*, Vol:105, ISSN:0734-743X, Pages:39-53

Arora H, Del Linz P, Dear JP, 2017, Damage and deformation in composite sandwich panels exposed to multiple and single explosive blasts, *International Journal of Impact Engineering*, Vol:104, ISSN:0734-743X, Pages:95-106

John P. Dear, Emily Rolfe, Mark Kelly, Hari Arora and Paul A. Hooper, "Blast performance of composite sandwich structures, *Procedia Engineering*, Vol. 173, pp 471-478, 2017

Mohagheghian I, Wang Y, Jiang L, Zhang X, Guo X, Yan Y, Kinloch AJ, Dear JP, 2017, Quasi-static bending and low velocity impact performance of monolithic and laminated glass windows employing chemically strengthened glass, *European Journal of Mechanics A - Solids*, Vol:63, ISSN:0997-7538, Pages:165-186

Kaboglu C, Pimenta S, Morris A, Dear JP, 2017, The effect of different types of core material on the flexural behavior of sandwich composites for wind turbine blades, *Journal of Thermal Engineering*, Vol:3, ISSN:2148-7847, Pages:1102-1109

Mohagheghian I, Wang Y, Zhou J, Yu L, Guo X, Yan Y, Charalambides MN, Dear JP, 2017, Deformation and damage mechanisms of laminated glass windows subjected to high velocity soft impact, *International Journal of Solids and Structures*, Vol:109, ISSN:0020-7683, Pages:46-62

Kelly M, Arora H, Worley A, Kaye M, Del Linz P, Hooper PA, Dear JP, 2016, Sandwich Panel Cores for Blast Applications: Materials and Graded Density, *Experimental Mechanics*, Vol:56, ISSN:0014-4851, Pages:523-544

Rolfe E, Kelly M, Arora H, Hooper PA, Dear JP, 2016, X-ray CT analysis after blast of composite sandwich panels, 2nd International Symposium on Dynamic Response and Failure of Composite Materials, (draft 2016), Vol:167, ISSN:1877-7058, Pages:176-181

Arora H, Kelly M, Worley A, Del Linz P, Fergusson A, Hooper PA, Dear JP, 2014, Compressive strength after blast of sandwich composite materials, *Royal Society of London. Philosophical Transactions A. Mathematical, Physical and Engineering Sciences*, Vol:372, ISSN:1364-503X

Kelly M, Arora H, Dear JP, 2014, The comparison of various foam polymer types in composite sandwich panels subjected to full scale air blast loading, *International Symposium on Dynamic Response and Failure of Composite Materials (draft 2014)*, Vol:88, ISSN:1877-7058, Pages:48-53

Hooper PA, Sukhram RAM, Blackman BRK, Dear JP, 2012, On the blast resistance of laminated glass, *International Journal of Solids and Structures*, Vol:49, ISSN:0020-7683, Pages:899-918

Arora H, Hooper PA, Dear JP, 2011, Dynamic response of full-scale sandwich composite structures subject to air-blast loading, *Composites Part A - Applied Science and Manufacturing*, Vol:42, ISSN:1359-835X, Pages:1651-1662

Jensen FM, Puri AS, Dear JP, Branner K, Morris A, 2011, Investigating the impact of non-linear geometrical effects on wind turbine blades-Part 1: Current status of design and test methods and future challenges in design optimization, *Wind Energy*, Vol:14, ISSN:1095-4244, Pages:239-254

Arora H, Rolfe E, Kelly M, Dear JP, 2017, Full-Scale Air and Underwater-Blast Loading of Composite Sandwich Panels, *Explosion Blast Response of Composites*, Pages: 161-199, ISBN: 9780081020920

Kaboglu C, Pimenta S, Morris A, Dear JP, Failure mode of composite sandwich structures with graded core, *ICAME'15 -International Conference on Advances In Mechanical Engineering*

Arora H, Hooper PA, Dear JP, 2012, The Effects of Air and Underwater Blast on Composite Sandwich Panels and Tubular Laminate Structures, *Experimental Mechanics*, Vol: 52, Pages: 59-81, ISSN: 0014-4851

Arora H, Hooper PA, Del Linz P, Yang H, Chen S, Dear JP, 2012, Modelling the behaviour of composite sandwich structures when subject to air-blast loading, *International Journal of Multiphysics*, Vol: 6, Pages: 199-217, ISSN: 1750-9548

Dear JP, Lee H, Brown SA, 2005, Impact damage processes in composite sheet and sandwich honeycomb materials, 5th International Symposium on Impact Engineering, Publisher: Pergamon-Elsevier Science LTD, Pages: 130-154, ISSN: 0734-743X

Dear JP, 2004, Effect of size, shape and geometry on the impact response and failure of composites, 5th international symposium on impact engineering, Churchill College, Cambridge, July 2004

Lee H, Dear JP, 2002, Impact performance and residual strength of composite sandwich structures, Materials Congress, April 2002, London

Yau MWF, Dear JP, 2002, Impact damage and damage development in curved carbon-fibre composite laminates, Materials congress, April 2002, London

Bland PW, Dear JP, Edge CH, Gordon BEA, 1999, Impact regimes in carbon-fibre reinforced plastics, 6th International Conference on Composite Engineering (Florida-USA), Pages: 69-70

Laight A, Dear JP, Farmer SJ, Jones CH, 1991, Measurement Of Elastic-Moduli Of Composite Panels At Elevated-Temperatures By Vibration Excitation, Measurement Science and Technology, Vol: 2, Pages: 980-984, ISSN: 0957-0233

Dear JP, Hashemi S, Jamarani F, Kinloch AJ, Macgillivray H, Wang Y, Williams JG, 1991, Interlaminar Failure Of Composites, 1st International Conf On Deformation And Fracture Of Composites, Publisher: Plastics & Rubber Inst, Pages: 1-6