

EPSRC Centre for Doctoral Training in Advanced Composites for Innovation and Science: student publications 2011-2016

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2016 publications

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- **A.B. Baker**, D.F. Wass and R.S. Trask, Novel Multi-Stage Three-Dimensional Deployment Employing Ionoprinting of Hydrogel Actuators, *MRS Advances*, Volume 1, Issue 58, 2016, Pages 3871-3876 (<http://dx.doi.org/10.1557/adv.2016.361>)
- **S.R.G. Bates**, I.R. Farrow, R. S. Trask, 3D printed polyurethane honeycombs for repeated tailored energy absorption, *Materials & Design*, Volume 112, 15 December 2016, Pages 172-183 (<http://dx.doi.org/10.1016/j.matdes.2016.08.062>)
- **C. Osmiani**, G. Mohamed, J.W.G. Treiber, G. Allegri, I.K. Partridge, Exploring the influence of micro-structure on the mechanical properties and crack bridging mechanisms of fibrous tufts, *Composites Part A: Applied Science and Manufacturing*, Volume 91, Part 2, December 2016, Pages 409-419 (<http://dx.doi.org/10.1016/j.compositesa.2016.08.008>)
- **T. Llewellyn-Jones**, R. Allen, R.S. Trask, Curved Layer Fused Filament Fabrication Using Automated Toolpath Generation, *3D Printing and Additive Manufacturing*, Volume 3, Issue 4, 1 December 2016, Pages 236-243 (<https://doi.org/10.1515/phys-2016-0057>)
- **G. Ariu**, I. Hamerton, D. Ivanov, Positioning and aligning CNTs by external magnetic field to assist localised epoxy cure, *Open Physics*, Volume 14, Issue 1, December 2016, Pages 508-516 (<http://dx.doi.org/10.1089/3dp.2016.0033>)
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- **R.M.J. Groh**, P.M. Weaver, A computationally efficient 2D model for inherently equilibrated 3D stress predictions in heterogeneous laminated plates. Part II: Model validation, *Composite Structures*, Volume 156, 15 November 2016, Pages 186-217 (<http://dx.doi.org/10.1016/j.compstruct.2015.11.077>)
- **R.M.J. Groh**, P.M. Weaver, A computationally efficient 2D model for inherently equilibrated 3D stress predictions in heterogeneous laminated plates. Part I: Model formulation, *Composite Structures*, Volume 156, 15 November 2016, Pages 171-185 (<http://dx.doi.org/10.1016/j.compstruct.2015.11.078>)
- C. Thurnherr, **R.M.J. Groh**, P. Ermanni, P.M. Weaver, Higher-order beam model for stress predictions in curved beams made from anisotropic materials, *International Journal of Solids and Structures*, Volumes 97–98, 15 October 2016, Pages 16-28 (<http://dx.doi.org/10.1016/j.ijsolstr.2016.08.004>)
- **J. S. Chilles**, A.F. Koutsomitopoulou, A.J. Croxford, I.P. Bond, Monitoring cure and detecting damage in composites with inductively coupled embedded sensors, *Composites Science and Technology*, Volume 134, 6 October 2016, Pages 81-88 (<http://dx.doi.org/10.1016/j.compscitech.2016.07.028>)

- **A.B. Baker**, D.F. Wass, R.S. Trask, 4D sequential actuation: combining ionoprinting and redox chemistry in hydrogels, *Smart Materials and Structures*, Volume 25, Issue 10, September 2016, pp. 10LT02 (<http://dx.doi.org/10.1088/0964-1726/25/10/10LT02>)
- G. Zucco, **R.M.J. Groh**, A. Madeo, P.M. Weaver, Mixed shell element for static and buckling analysis of variable angle tow composite plates, *Composite Structures*, Volume 152, 15 September 2016, Pages 324-338 (<http://dx.doi.org/10.1016/j.compstruct.2016.05.030>)
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- **R.M. Neville**, F. Scarpa, A. Pirrera, Shape morphing Kirigami mechanical metamaterials, *Scientific Reports*, Volume 6, Number 31067, 5 August 2016 (<http://dx.doi.org/10.1038/srep31067>)
- C.J.C. Heath, **R.M. Neville**, F. Scarpa, I.P. Bond, K.D. Potter, Morphing hybrid honeycomb (MOHYCOMB) with in situ Poisson's ratio modulation, *Smart Materials and Structures*, Volume 25, Issue 8, July 2016, 085008 (<http://dx.doi.org/10.1088/0964-1726/25/8/085008>)
- **E. Eckstein**, A. Pirrera, P.M. Weaver, Thermally Driven Morphing and Snap-Through Behavior of Hybrid Laminate Shells, *AIAA Journal*, Volume 54, Issue 5, May 2016, Pages 1778-1788 (<http://dx.doi.org/10.2514/1.J054648>)
- **B. El Said**, D. Ivanov, A.C. Long, S.R. Hallett, Multi-scale modelling of strongly heterogeneous 3D composite structures using spatial Voronoi tessellation, *Journal of the Mechanics and Physics of Solids*, Volume 88, March 2016, Pages 50-71 (<http://dx.doi.org/10.1016/j.jmps.2015.12.024>)
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- **R. Luterbacher**, R.S. Trask, I.P. Bond, Static and fatigue tensile properties of cross-ply laminates containing vasculures for self-healing applications, *Smart Materials and Structures*, Volume 25, Issue 1, January 2016, pp. 015003 (<http://dx.doi.org/10.1088/0964-1726/25/1/015003>)

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- **H.V. Jones**, A.P. Chatzimichali, R. Middleton, K.D. Potter, C. Ward, Exploring the discrete tools used by laminators in composites manufacturing: application of novel concept, *Advanced Manufacturing: Polymer & Composites Science*, Volume 1, Issue 4, December 2015, Pages 185-198 (<http://dx.doi.org/10.1080/20550340.2015.1105613>)

- N. Isart, **B. El Said**, D.S. Ivanov, S.R. Hallett, J.A. Mayugo, N. Blanco, Internal geometric modelling of 3D woven composites: A comparison between different approaches, *Composite Structures*, Volume 132, 15 November 2015, Pages 1219-1230 (<http://dx.doi.org/10.1016/j.compstruct.2015.07.007>)
- **E. Lamacchia**, A. Pirrera, I.V. Chenchiah, P.M. Weaver, Morphing shell structures: A generalised modelling approach, *Composite Structures*, Volume 131, 1 November 2015, Pages 1017-1027 (<http://dx.doi.org/10.1016/j.compstruct.2015.06.051>)
- **J.S. Chilles**, A. Croxford, I.P. Bond, Design of an embedded sensor, for improved structural performance, *Smart Materials and Structures*, Volume 24, Issue 11, October 2015, pp. 115014 (<http://dx.doi.org/10.1088/0964-1726/24/11/115014>)
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- M. Yasaee, C. Killock, **J.W. Hartley**, I. P. Bond, Control of Compressive Fatigue Delamination Propagation of Impact Damaged Composites Using Discrete Thermoplastic Interleaves, *Applied Composite Materials*, Volume 22, Issue 5, October 2015, Pages 559-572 (<http://dx.doi.org/10.1007/s10443-014-9423-2>)
- **M.S. Scholz**, B.W. Drinkwater, **T.M. Llewellyn-Jones**, R.S. Trask, Counterpropagating wave acoustic particle manipulation device for the effective manufacture of composite materials, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, Volume 62, Issue 10, October 2015, pp. 1845-1855 (<http://dx.doi.org/10.1109/TUFFC.2015.007116>)
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- **D.T. Everitt**, **R. Luterbacher**, **T.S. Coope**, R.S. Trask, D.F. Wass, I.P. Bond, Optimisation of epoxy blends for use in extrinsic self-healing fibre-reinforced composites, *Polymer*, Volume 69, 9 July 2015, Pages 283-292 (<http://dx.doi.org/10.1016/j.polymer.2015.02.047>)
- **M.F. Pernice**, N.V. De Carvalho, J.G. Ratcliffe, S.R. Hallett, Experimental study on delamination migration in composite laminates, *Composites Part A: Applied Science and Manufacturing*, Volume 73, June 2015, Pages 20-34 (<http://dx.doi.org/10.1016/j.compositesa.2015.02.018>)
- **S. C. White**, P. M. Weaver, K. C. Wu, Post-buckling analyses of variable-stiffness composite cylinders in axial compression, *Composite Structures*, Volume 123, May 2015, Pages 190-203 (<http://dx.doi.org/10.1016/j.compstruct.2014.12.013>)
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- **L. D. Bloom**, M. A. Napper, C. Ward, K. Potter, On the evolution of the distribution of entrapped air at the tool/first ply interface during lay-up and debulk, *Advanced Manufacturing: Polymer & Composites Science*, Volume 1, Issue 1, February 2015, Pages 36-43 (<http://dx.doi.org/10.1179/2055035914Y.0000000005>)

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- **S.C. White**, G. Raju, P.M. Weaver, Initial post-buckling of variable-stiffness curved panels, *Journal of the Mechanics and Physics of Solids*, Volume 71, November 2014, Pages 132-155 (<http://dx.doi.org/10.1016/j.jmps.2014.07.003>)
- **T.S. Coope**, D.F. Wass, R.S. Trask, I.P. Bond, Repeated self-healing of microvascular carbon fibre reinforced polymer composites, *Smart Materials and Structures*, Volume 23, Issue 11, October 2014, pp. 115002 (<http://dx.doi.org/10.1088/0964-1726/23/11/115002>)
- **C. Scarth**, J. E. Cooper, P. M. Weaver, G. H. C. Silva, Uncertainty quantification of aeroelastic stability of composite plate wings using lamination parameters, *Composite Structures*, Volume 116, September–October 2014, Pages 84-93 (<http://dx.doi.org/10.1016/j.compstruct.2014.05.007>)
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- **R. M. Neville**, A. Monti, K. Hazra, F. Scarpa, C. Remillat, I. R. Farrow, Transverse stiffness and strength of Kirigami zero- ν PEEK honeycombs, *Composite Structures*, Volume 114, August 2014, Pages 30-40 (<http://dx.doi.org/10.1016/j.compstruct.2014.04.001>)
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- **B.H. Coburn**, Z. Wu, P.M. Weaver, Buckling analysis of stiffened variable angle tow panels, *Composite Structures*, Volume 111, May 2014, Pages 259-270 (<http://dx.doi.org/10.1016/j.compstruct.2013.12.029>)
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- **E. Eckstein**, A. Pirrera, P.M. Weaver, Multi-mode morphing using initially curved composite plates, *Composite Structures*, Volume 109, March 2014, Pages 240-245 (<http://dx.doi.org/10.1016/j.compstruct.2013.11.005>)
- Y. Hou, **R. Neville**, F. Scarpa, C. Remillat, B. Gu, M. Ruzzene, Graded conventional-auxetic Kirigami sandwich structures: Flatwise compression and edgewise loading, *Composites Part B: Engineering*, Volume 59, March 2014, Pages 33-42 (<http://dx.doi.org/10.1016/j.compositesb.2013.10.084>)
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- **M.P.M. Dicker**, **P.F. Duckworth**, **A.B. Baker**, **G. Francois**, **M.K. Hazzard**, P.M. Weaver, Green composites: A review of material attributes and complementary applications, *Composites Part A: Applied Science and Manufacturing*, Volume 56, January 2014, Pages 280-289 (<http://dx.doi.org/10.1016/j.compositesa.2013.10.014>)

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- **N. Buckney**, A. Pirrera, **S.D. Green**, P.M. Weaver, Structural efficiency of a wind turbine blade, *Thin-Walled Structures*, Volume 67, June 2013, Pages 144-154 (<http://dx.doi.org/10.1016/j.tws.2013.02.010>)
- **E. Eckstein**, A. Pirrera, P.M. Weaver, Morphing high-temperature composite plates utilizing thermal gradients, *Composite Structures*, Volume 100, June 2013, Pages 363-372 (<http://dx.doi.org/10.1016/j.compstruct.2012.12.049>)
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