

## EPSRC Centre for Doctoral Training in Advanced Composites for Innovation and Science (ACCIS CDT)

## EPSRC Centre for Doctoral Training in Composites Science, Engineering and Manufacturing (CoSEM CDT)

### Student publications 2011-2019

<http://www.bristol.ac.uk/composites/cdt/student-publications/>

CDT student author(s) shown in bold.

#### 2020 publications

- **C.J. Hunt**, Y. Zhao, M.R. Wisnom, B.K.S. Woods, WrapToR composite truss structures: Measurement and modelling of mechanical response, Composite Structures, Volume 254, December 2020, 112834 (<https://doi.org/10.1016/j.compstruct.2020.112834>)
- **A.E. Rivero**, P.M. Weaver, J.E. Cooper, B.K.S. Woods, Structural modeling of compliance-based camber morphing structures under transverse shear loading, AIAA Journal, Volume 58, Number 11, November 2020, pp. 4941-4951 (<https://doi.org/10.2514/1.J058842>)
- **T. Gordon**, X. Xu, M.R. Wisnom, B.C. Kim, Novel tape termination method for automated fibre placement: Cutting characteristics and delamination suppression, Composites Part A: Applied Science and Manufacturing, Volume 137, October 2020, 106023 (<https://doi.org/10.1016/j.compositesa.2020.106023>)
- **S.W. Grey**, F. Scarpa, M. Schenk, Mechanics of paper-folded origami: A cautionary tale, Mechanics Research Communications, Volume 107, July 2020, 103540 (<https://doi.org/10.1016/j.mechrescom.2020.103540>)
- **Y. Wang**, M.K. Chea, J.P.H. Belnoue, J. Kratz, D.S. Ivanov, S.R. Hallett, Experimental characterisation of the in-plane shear behaviour of UD thermoset prepregs under processing conditions, Composites Part A: Applied Science and Manufacturing, Volume 133, June 2020, 105865 (<https://doi.org/10.1016/j.compositesa.2020.105865>)
- P. Aravindan, F. Becagli, M.L. Longana, **L.G. Blok**, T.R. Pozegic, S.J. Huntley, T. Rendall. I. Hamerton, Remanufacturing of woven carbon fibre fabric production waste into high performance aligned discontinuous fibre composites, Journal of Composites Science, Volume 4, Issue 2, June 2020, 68 (<https://doi.org/10.3390/jcs4020068>)
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- T. Macquart, **S. Scott**, P. Greaves, P.M. Weaver, A. Pirrera, Corotational finite element formulation for static nonlinear analyses with enriched beam elements, AIAA Journal, Volume 58, Number 5, May 2020 (<https://doi.org/10.2514/1.J058441>)
- M.Y. Rivera Lopez, J.M. Lambas, **J.P. Stacey**, S. Gamage, A. Suliga, A. Viquerat, I. Hamerton, Development of cycloaliphatic epoxy-POSS nanocomposite matrices with enhanced resistance to atomic oxygen, Molecules, Volume 25, Issue 7, 25 March 2020, 1483 (<https://doi.org/10.3390/molecules25071483>)
- **K. Willicombe**, M. Elkington, I. Hamerton, C. Ward, Development of novel transportation shells for the rapid, automated manufacture of automotive composite parts, Procedia Manufacturing, Volume 51, 2020, Pages 818-825 (<https://doi.org/10.1016/j.promfg.2020.10.115>)

## 2019 publications

- **R.L. Lincoln**, F. Scarpa, V.P. Ting, R.S. Trask, Multifunctional composites: a metamaterial perspective, Multifunctional Materials, Volume 2, Number 4, 31 December 2019, 043001 (<http://dx.doi.org/10.1088/2399-7532/ab5242>)
- M.P. O'Donnell, **J.P. Stacey**, I.V. Chenchiah, A. Pirrera, Multiscale tailoring of helical lattice systems for bespoke thermoelasticity, Journal of the Mechanics and Physics of Solids, Volume 133, December 2019, 103704 (<https://doi.org/10.1016/j.jmps.2019.103704>)
- **A.K.W. Hii**, S. Minera, R.M.J. Groh, A. Pirrera, L.F. Kawashita, Three-dimensional stress analyses of complex laminated shells with a variable-kinematics continuum shell element, Composite Structures, Volume 229, December 2019, 111405 (<https://doi.org/10.1016/j.compstruct.2019.111405>)
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- **A.R. Kristnama**, X. Xu, D. Nowell, M.R. Wisnom, S.R. Hallett, Experimental investigation of high velocity oblique impact and residual tensile strength of carbon/epoxy laminates, Composites Science and Technology, Volume 182, September 2019, 107772 (<https://doi.org/10.1016/j.compscitech.2019.107772>)
- **I. Tretiak**, R.A. Smith, A parametric study of segmentation thresholds for X-ray CT porosity characterisation in composite materials, Composites Part A: Applied Science and Manufacturing, Volume 123, August 2019, Pages 10-24 (<https://doi.org/10.1016/j.compositesa.2019.04.029>)
- **Y. He**, A. Suliga, A. Brinkmeyer, M. Schenk, I. Hamerton, Atomic oxygen degradation mechanisms of epoxy composites for space applications, Polymer Degradation and Stability, Volume 166, August 2019, Pages 108-120 (<https://doi.org/10.1016/j.polymdegradstab.2019.05.026>)
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- W. Zhang, S. Zhao, **R. Sun**, F. Scarpa, J. Wang, In-plane mechanical behavior of a new star-re-entrant hierarchical metamaterial, Polymers, Volume 11, Issue 7, July 2019, 1132. (<https://doi.org/10.3390/polym11071132>)
- **J.D. Brigido**, S.G. Burrow, B.S.K. Woods, Switchable stiffness morphing aerostructures based on granular jamming, Journal of Intelligent Material Systems and Structures, Volume 30, Issue 17, July 2019, Pages 2581-2594 (<https://doi.org/10.1177/1045389X19862372>)
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- **T. Rev**, M. Jalalvand, J.D. Fuller, M. Wisnom, G. Czel, A simple and robust approach for visual overload indication - UD thin-ply hybrid composite sensors, Composites Part A: Applied Science and Manufacturing, Volume 121, June 2019, Pages 376-385 (<https://doi.org/10.1016/j.compositesa.2019.03.005>)

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- R. Theunissen, **R. C. Worboys**, Near-wake observations behind azimuthally perforated disks with varying hole layout and porosity in smooth airstreams at high reynolds numbers, *Journal of Fluids Engineering*, Volume 141, No. 5, May 2019, 051108 (<https://doi.org/10.1115/1.4041614>)
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- L. Yang, Q. Zhao, Y. Hou, **R. Sun**, M. Cheng, M Shen, S Zeng, H Ji, J Qiu, High breakdown strength and outstanding piezoelectric performance in flexible PVDF based percolative nanocomposites through the synergistic effect of topological-structure and composition modulations, *Composites Part A: Applied Science and Manufacturing*, Volume 114, November 2018, Pages 13-20 (<https://doi.org/10.1016/j.compositesa.2018.07.039>)
- **J. Alston**, A. Croxford, J. Potter, P. Blanloeuil, Nonlinear non-collinear ultrasonic detection and characterisation of kissing bonds, *NDT & E International*, Volume 99, October 2018, Pages 105-116 (<https://doi.org/10.1016/j.ndteint.2018.07.003>)

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- X. Ning, X. Yu, H. Wang, **R. Sun**, R. Corman, C.M. Lee, Y. Yao, A. Chempakasseril, Z. Zhang, P. Tian, Z. Wang, R.H. Ewoldt, Y. Huang, Y. Zhang, J.A. Rogers, Mechanically active materials in three-dimensional mesostructures, *Science Advances*, Volume 4, Issue 9, September 2018 (<https://doi.org/10.1126/sciadv.aat8313>)
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- **B.S. Cox**, R.M.J. Groh, D. Avitabile, A. Pirrera, Modal nudging in nonlinear elasticity: Tailoring the elastic post-buckling behaviour of engineering structures, *Journal of the Mechanics and Physics of Solids*, Volume 116, July 2018, Pages 135-149 (<https://doi.org/10.1016/j.jmps.2018.03.025>)
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- **R. Sun**, B. Zhang, L. Yang, W. Zhang, I. Farrow, F. Scarpa, J. Rossiter, Kirigami stretchable strain sensors with enhanced piezoelectricity induced by topological electrodes, *Applied Physics Letters*, Volume 112, Issue 25, June 2018, 251904 (<https://doi.org/10.1063/1.5025025>)
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- **A.E. Rivero**, P.M. Weaver, J.E. Cooper, B.K.S. Woods, Parametric structural modelling of fish bone active camber morphing aerofoils, *Journal of Intelligent Material Systems and Structures*, Volume 29, Issue 9, May 2018, Pages 2008-2026 (<https://doi.org/10.1177/1045389X18758182>)
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- G. Czél, **T. Rev**, M. Jalalvand, M. Fotouhi, M.L. Longana, O.J. Nixon-Pearson, M.R. Wisnom, Pseudo-ductility and reduced notch sensitivity in multi-directional all-carbon/epoxy thin-ply hybrid composites, *Composites Part A: Applied Science and Manufacturing*, Volume 104, January 2018, Pages 151-164 (<https://doi.org/10.1016/j.compositesa.2017.10.028>)
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- X. Ning, H. Wang, X. Yu, J. A. N. T. Soares, Z. Yan, K. Nan, G. Velarde, Y. Xue, **R. Sun**, Q. Dong, H. Luan, C. M. Lee, A. Chempakasseril, M. Han, Y. Wang, L. Li, Y. Huang, Y. Zhang, J. A. Rogers, 3D Tunable, Multiscale, and Multistable Vibrational Micro-Platforms Assembled by Compressive Buckling, *Advanced Functional Materials*, Volume 27, Issue 14, 11 April 2017, 1605914 (<http://dx.doi.org/10.1002/adfm.201605914>)
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