



## **Mr Carwyn Ward**

**B.Eng. (Hons), M.Res.(Wales), PhD**

Lecturer in Composites Design, Processing & Manufacture

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## **Summary**

## **Biography**

Carwyn Ward gained a BEng(Hons) in Materials Science and Engineering and an MRes in Recycling Technologies from the University of Wales, Swansea in 2001 and 2003 respectively. In 2003 he moved to the University of Bristol to undertake a PhD on the recycling of in-house waste, completing in early 2009, and which was later re-published as an invited chapter with Woodhead Publishing. From spring 2007 until summer 2014 he worked as a full-time researcher, with a main interest in investigating the low cost manufacture of complex composite geometries. Carwyn has collaborated with a variety of partners and funded programmes and since summer 2014 has taken on a lecturing role within the Department of Aerospace Engineering.

## **Teaching**

Within the Department of Aerospace Engineering, Carwyn Ward delivers material on Advanced Materials and Structures, and Composite Design and Manufacture. He is also involved in delivering the Design, Build, Test element of the ACCIS Centre for Doctoral Training, and contributes materials and content to the Industrial Doctorate Centre in Composites Manufacture taught elements.

## **Keywords**

- Composites Manufacturing
- Automation for Composites
- Factory Processes/Operations
- Process Optimisation
- Costs
- Recycling
- Assembly & Repair

## **Memberships**

## **Organisations**

[Department of Aerospace Engineering](#)

## **Other sites**

- [Aerospace](#)

## **Research Groups**

- [Advanced Composites Collaboration for Innovation and Science \(ACCIS\) - Core](#)

## CDTs

- [IDC in Composites Manufacture](#)

## Recent publications

- Herring, R, Dyer, K, MacLeod, A & Ward, C, 2019, '[Computational fluid dynamics methodology for characterisation of leading edge erosion in whirling arm test rigs](#)'. in: *Journal of Physics: Conference Series*.
- Elkington, M, Ward, C, Ward-Cherrier, B, Lepora, N, Pestell, N & Almas, E, 2019, '[Layup end effectors with tactile sensing capabilities](#)'. in: Suong V Hoa (eds) *Proceedings of the 4th Symposium on Automated Composite Manufacturing*. Concordia University Press
- Pollard, D, Herrmann, G, Ward, C & Etches, J, 2018, '[Application of an arm-based FDM system for sandwich panel fabrication](#)'.
- Pollard, D, Herrmann, G, Ward, C & Etches, J, 2018, '[A comparison of FDM structural layouts and implementation of an open-source arm-based system](#)'. in: *2018 3rd International Conference on Mechanical, Manufacturing, Modeling and Mechatronics (IC4M 2018) – 2018 3rd International Conference on Design, Engineering and Science (ICDES 2018)*. EDP Sciences
- Iredale, R, Ward, C & Hamerton, I, 2017, '[Modern advances in bismaleimide resin technology: A 21st century perspective on the chemistry of addition polyimides](#)'. *Progress in Polymer Science*, vol 69., pp. 1-21
- Blok, LG, Kratz, J, Lukaszewicz, D, Hesse, S, Ward, C & Kassapoglou, C, 2017, '[Improvement of the in-plane crushing response of CFRP sandwich panels by through-thickness reinforcements](#)'. *Composite Structures*, vol 161., pp. 15-22
- Winter, D, Crowley, D, Ward, C, Williams, S, McMahon, C & Potter, K, 2017, '[Using real-time data for increasing the efficiency of the automated fibre placement process](#)'. *International Journal of Vehicle Structures and Systems*, vol 9., pp. 11-16
- Bauswein, Y, Veldenz, L & Ward, C, 2017, '[Developing a cost comparison technique for hand lay-up versus automated fibre placement and infusion versus out-of-autoclave](#)'.
- Jones, H, Roudaut, A, Chatzimichali, A, Potter, K & Ward, C, 2017, '[The Dibber: Designing a standardised handheld tool for lay-up tasks](#)'. *Applied Ergonomics*, vol 65., pp. 240-254
- Hartley, J, Kratz, J, Ward, C & Partridge, I, 2017, '[Effect of tufting density and loop length on the crushing behaviour of tufted sandwich specimens](#)'. *Composites Part B: Engineering*, vol 112., pp. 49-56

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