Composites UK Trade Association

DREAM BIG COMPOSITES

INNOVATION IN COMPOSITE MANUFACTURE

FINALIST: Dream Big Composites

Dream Big Composites' innovation is a non-contact, real-time monitoring and control platform for composite manufacturing processes, including RTM, infusion, and prepreg. It continuously measures key parameters, resin exotherm, vacuum, temperature, humidity, and barometric pressure, and can actively intervene to prevent defects, such as regulating vacuum pumps. There are future plans to spot failing catalyst pumps, or detecting excessive humidity before cure. Every run generates second-by-second, immutable sensor data, with optional blockchain-hashed storage for tamper-evident traceability.

Manufacturers face costly scrap and rework when process deviations go undetected. The platform transforms quality assurance from reactive to proactive, providing highly visual alerts for immediate operator intervention. Predictive maintenance can also enabled by early detection of equipment degradation. Benefits include reduced scrap, lower energy use, consistent high-quality production, and cross-process applicability without tooling changes.

Technically, the system integrates advanced sensing, embedded control, and industrial data handling. It was developed through proof-of-concept trials, field pilots, and iterative refinement with manufacturers, requiring expertise in composites, control systems, software, and human-centred UI design.

The platform addresses all high-value composite sectors like automotive, aerospace, marine, wind, rail, and construction, where yield, traceability, and sustainability are critical. The UK Serviceable Obtainable Market is estimated at £76 million, with global applicability. Its affordability and ease of deployment allow adoption from SMEs to tier-one manufacturers. Developed over 2.5 years in collaboration with industry partners, the system integrates seamlessly into production workflows, protecting quality, reducing waste, supporting predictive maintenance, and delivering measurable operational, commercial, and environmental benefits.

Learn more at: www.dreambigcomposites.com