

PRESS RELEASE

THE 2021 WINNERS OF THE JEC COMPOSITES CHALLENGE, STARTUP BOOSTER AND INNOVATION AWARDS UNVEILED

Paris June 2, 2021 – The winners of the JEC Composites Innovation Awards, Startup Booster and Composites Challenge have been revealed during the All-in-one Awards ceremony held Wednesday, June 2nd during JEC Composites Connect. These competitions reward the best cutting-edge and ingenious projects using composites to their full potential in different categories every year. This virtual awards ceremony was followed by more than 500 viewers.

THE JEC COMPOSITES CHALLENGE WINNERS

The Composites Challenge is a competition of PhD sourced and selected for their research in the field of composites. They got the challenge of pitching their thesis in 5 minutes, using one slide, in front of a jury composed of industrial and academic experts. 10 PhDs were selected from all over the world for this edition, among the dozens of applications received.

The winners of JEC Composites Challenge 2021 are:

WINNER

Gearóid CLANCY, University of Limerick



Spreading of carbon fibre/thermoplastic pre-preg tapes

Varying the width of pre-preg tapes can eliminate defects in complex composite structures. Current methods struggle to produce doubly curved surfaces such as aircraft noses without gaps or overlaps. An improved method, utilized with automated tape placement, can spread pre-preg tapes eliminating gaps and overlaps, boosting the efficiency of complex structures.

RUNNER-UP

Kelly CHANG, University of Illinois at Urbana-Champaign



Autonomous healing and indication of cracks in fiber-reinforced composites

We introduce an elegant pathway to reducing high maintenance costs by dispersing microcapsules containing a dye and liquid healing agent in our composites. These capsules can extend the lifespan of composites while

alleviating the challenges associated with locating damage.

THE JEC COMPOSITES STARTUP BOOSTER WINNERS

Startup Booster is the leading startup competition in the world of Composites. It enables companies to identify and assess innovations that may have a potential impact on their industry and complete their ongoing projects. Launched in 2017, Startup Booster has already fostered the emergence of 500+ innovative projects from 50+ countries, 60 finalists and 20 winners.

The winners of JEC Startup Booster 2020 are:

- Continuous Composites (USA)



Continuous Composites is a disruptive startup with their patented composites manufacturing technology, Continuous Fiber 3D Printing (CF3D®). CF3D® combines high performance continuous fiber with rapid curing thermoset resins to enable affordable manufacturing of complex composite structures. CF3D® is an industry agnostic automated solution comprised of configurable hardware, proprietary software, and tailorable materials solutions for strong, lightweight applications.

- Elemental Coatings (USA)



Elemental Coatings has developed advanced anti-icing technology that prevents the buildup of ice on a variety of materials. We formulate coatings that look, feel, and function like normal paints, but have the remarkable property of making it very hard for ice to stick to surfaces. The coatings are highly customizable, leading to applications in aerospace, automotive, trucking, power transmission and generation, and the consumer space.

- CompPair (Switzerland)



CompPair Technologies Ltd. brings the first commercially available healable and sustainable composite materials, reducing repair time from hours to minutes and improving circularity. Composite parts can be fully repaired in place, multiple times, simply with heat. We provide a range of unique prepregs compatible with existing production lines of structural composites. Our technology acts during the whole lifetime of products, helping manufacturers, consumers, and the planet.

JEC COMPOSITES STARTUP BOOSTER SPONSORS



THE JEC COMPOSITES INNOVATION AWARDS WINNERS

The **JEC Composites Innovation Awards** is a long-established and worldwide program with three simple goals: identifying, promoting, and rewarding the most innovative composite solutions in the world. Over the past 15 years, the JEC Innovation Program has involved 1,800 companies worldwide; 177 companies and 433 partners have been rewarded for their composite innovations' excellence. The JEC Innovation Awards reward composites champions based on partner involvement in the value chain, technicality, or commercial applications of innovations.

The **2021 JEC Composites Innovation Awards winners** have been rewarded for their innovative solutions in 7 categories:

- **Aerospace**
- **Automotive & road transportation – structural**
- **Automotive & road transportation – exterior**
- **Building, Construction & Infrastructure**
- **Design**
- **Equipment and Machinery**
- **Sustainability**

JEC INNOVATION AWARDS OFFICIAL PARTNER



THE REINFORCER

Winners by categories

I. Category Aerospace

Development of an ultra-lightweight CFRP solar plane

Toray Carbon Magic Co., Ltd. (Japan)

www.carbonmagic.com

Partner(s) : SKY Perfect JSAT Corporation (Japan), Tokai University (Japan)

An ultra-lightweight and high-strength composite structure for high-altitude, long-endurance flight. The thin-walled composite integral structure was realized by CFD and FEA.

Key benefits

- High-flying force, securing wide areas for solar cell, lightweight and stiffness
- Short-term development that makes full use of simulation
- Thin-walled and hollow structure for primary structure
- Thin-walled composite frame for secondary structure
- 35 kg ultra-lightweight composite body



II. Category Automotive & road transportation - structural

Ebusco 3.0 series of city buses

Pondus Operations bv (Netherlands)

www.ebusco.com

Partner(s) : 5M s.r.o. (Czech Republic), Acralock / Engineered Bonding Solutions GmbH (Austria), Alba tooling & engineering GmbH (Slovenia), Ebusco (Netherlands), Eurocarbon (Netherlands), Grunewald GmbH & Co. KG (Germany), HÜBERS Verfahrenstechnik Maschinenbau GmbH (Germany), Telene SAS (France)

A groundbreaking and unique series of electric buses created by a combination of different composite materials and technologies resulting in a series of real game changers in public transport.

Key benefits

- 33% weight reduction
- Operational life span of the bus beyond 20 years
- 500 km range on a single charge
- Fully flat floor throughout the bus, increasing freedom of movement.
- Reduced maintenance costs



III. Category Automotive & road transportation - exterior

MINI John Cooper Works GP Carbon Spats

BMW Group (Germany)

Partner(s) : A. Rathmayr GmbH (Germany), Karl Wörwag Lack- und Farbenfabrik GmbH & Co. KG (Germany), Magna-Decoma Exterior Systems U.K. Ltd (UK), Multinorm (Germany), Pininfarina Deutschland GmbH (Germany), Rampf Production Systems GmbH & Co. KG (Germany), Schneider Form (Germany), SGL Carbon (Germany), SIKA Automotive Hamburg GmbH (Germany), Wagner Maschinen- und Vorrichtungsbau GmbH (Germany)

Without extensive body-in-white modifications 4 fender enlarging carbon spats are used in the MINIJCW GP limited edition. 5 USPs and cost-effective lightweight design are the key innovations.

Key benefits

- USP: CFRP HEXI Stitch appearance
- USP: Transfer basecoat technology (haptic-free)
- USP: Epoxy-CFRP/PC-ASA bonding
- Lightweight
- Exterior part numbering



IV. Category Building, Construction & Infrastructure

PCM span for railway bridges

ApATeCh (Russian Federation)

www.apatech.ru

Partner(s) : LS Engineering (Netherlands), RJD (Russian Federation)

Standard solutions for the construction of spans for railway bridges with fundamentally new structural and technological concepts based on PCM.

Key benefits

- Mobility of structures, possibility of multimodality during transportation
- Environmental friendliness during production, installation, and operation
- Reduction of energy consumption in comparison with standard structures
- Ability to reduce costs at the stages of modernisation or revision of the span.
- Life cycle costs for the PCM span is 1.6 times less than reinforced concrete.



V. Category Design

Carbon 1 MK II Smartphone

Carbon Mobile GmbH (Germany)

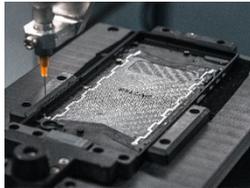
www.carbonmobile.com

Partner(s) : Lanxess-Bond Laminates (Germany), Modern Composites Limited (Hong Kong)

The world's first carbon fibre smartphone made possible through a revolutionary patented technology that solves the restrictive antenna, mechanical and thermal properties associated with the material.

Key benefits

- Sustainable: Built with recyclable materials and less than 5% plastic parts
- The lightest and slimmest smartphone available
- Easily repairable monocoque design
- A unique, futuristic yet timeless Bauhaus design
- No compromise on spec, ensuring great performance for the user



VI. Category Equipment & Machinery

CFRP-based robotised injection moulding machine

Anybrid GmbH (Germany)

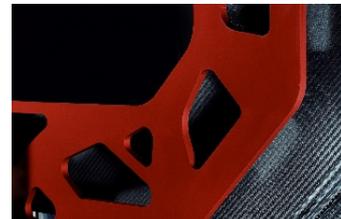
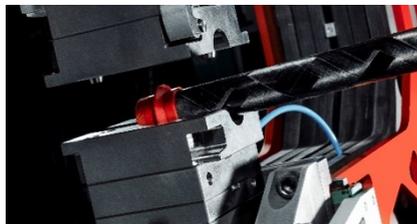
www.anybrid.de

Partner(s) : Institute of Lightweight Engineering and Polymer Technology, TU Dresden (Germany)

A unique and flexibly moving injection moulding machine realised by the use of CFRP. It results in new approaches for the design and production of lightweight parts in multi-material design.

Key benefits

- Flexible manufacturing system
- Individualised product design
- Smallest plant and mould sizes
- Economic production for small quantities
- Easy integration into production lines



VII. Category Sustainability

PU-based composite for offshore wind turbine rotor blades

Covestro Deutschland AG (Germany)

www.covestro.com

Partner(s):

Trelleborg Group(UK)

A polyurethane-based composite for more productive offshore wind turbine blades with new development opportunities for radar interference mitigation and high performance, environmental coatings.

Key benefits

- High productivity in manufacturing
- Lighter, longer, more durable blades
- Mitigating wind turbine radar interference
- Low emission, high performance coatings
- Potential higher AEP, lower LCoE





All winners and finalists' projects can be found on
www.jeccomposites-connect.events

Press contact JEC Group

Tel: +33 (0)1 58 36 43 99

Farah Boudjemia

boudjemia@jeccomposites.com

About JEC Group

JEC Group is the world's leading company dedicated entirely to developing information and business connections channels and platforms supporting the composite materials industry's growth and promotion. Publisher of the JEC Composites Magazine - the industry's reference magazine, JEC Group drives global innovation programs and organizes several events globally, including JEC World (the top and world-leading international exhibition dedicated to composite materials and their applications).

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