BIONTEC

PRESS KIT

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JEC PARIS-NORD VILLEPINTE
WORLD 2024 The Leading International Composites Show
March 5-7, 2024

Visit us at our stand **Hall 5 / L02**!

BIONTEC | Bionic Composite Technologies AG
Flurhofstrasse 150 | 9000 St. Gallen | Switzerland
+41 71 242 72 00 | composites@biontec.ch | biontec.ch

Press Release: JEC World, March 2024

Haute couture meets biomimetic design – BIONTEC extends towards thermoplastic composites

Complex components in medium to high volume require lean manufacturing technologies that allow for efficient material usage as well as precise and reproducible production. Thanks to 150 years' experience in haute couture embroidery, BIONTEC efficiently produces CFRP components in high volume including fully integrated electronics. Recent developments extend process capabilities to thermoplastic composites.

Naturally efficient lightweight design

From the fibre to the finished part, our process chain makes optimal use of the properties of the material and also enables immense freedom of design possible for your moulded composite parts. Bionic fibre placement and an automated injection process using resin transfer moulding (RTM) deliver the maximum performance at an economic price.
Additionally the load optimized preforms can be used in a thermoplastic composite forming process thus making use of all advantages associated with thermoplastic matrix systems.

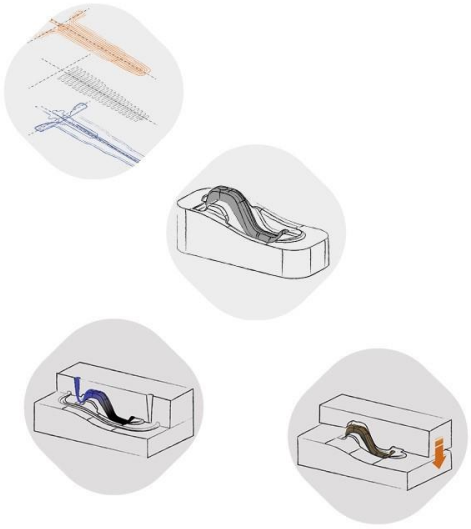

Figure:
From fibre to finished part:
- *Bionic fibre placement*
- *Preforming*
- *Resin Transfer Moulding or Thermoplastic Composite Forming*

Engineered to perform: From idea to serial production

As a reliable supplier for your parts and an all-round partner, we support you in the realisation of your product from the initial idea through to series production. Benefit from our in-depth knowledge and innovative ideas. We focus just as much on your specifications as on the right production processes for your product. As we can handle all of the necessary sub-processes in-house from the fibres right through to the finished part, we provide you with the optimal result.

Electronics integration: New possibilities for product designers

BIONTEC has successfully developed a process to integrate electronic components into structural parts allowing for standard conductors and connectors to be used. A world first and award winning metrology product will demonstrate the unique technology. It can be applied to any electronic device, whether it is connected via traditional wire or flex-print cables. The technology gives designers new possibilities for clean and sleek optics.

Figure: *Drone structure with fully integrated electronics.*

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Prepreg replacement

Looking at lower volume production of less than 1,000 parts per year, manufacturers typically rely on prepreg technology. However, the automation and short cycle time of BIONTEC's process allow significantly higher productivity, thus typically cutting production costs by half.

Figure: *High frequency pick-and-place rocker for semiconductor manufacturing.*

High volume production

At the other end of the volume range the typical products being replaced are forged or die-cast aluminium. Using automation, multi-cavity tooling and fast-curing resins, production rates of 100,000 ppa can be achieved. Key enablers for such high volumes are net shaped preforming and moulding in order to reduce material waste and machining efforts to a minimum. Using ideal fibre orientations in a component can increase potential weight savings up to 50% over aluminium, as several of BIONTECs serial production parts demonstrate.

Metal replacement

Other applications are the replacement of milled aluminium or titanium fittings for example in the machine or aerospace and space industry where performance and part consistency can be well met. Even tight regulations regarding flammability can be met. BIONTEC will show solutions specifically for aerospace interior components.

Figure: *Cockpit handle for business jets meeting flammability requirements and providing weight reduction and thermal insulation.*

In a nutshell

Whether you need load path aligned fibre layup, complex three-dimensional preforms or composite parts including attachments and finishing: Our automated and robust processes ensure that you receive first-class quality that pays off and that you can rely on.

Figure: *Stitched fabric, preform and finished part of brake lever*

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About BIONTEC (optional)

The Swiss company Bionic Composite Technologies AG (BIONTEC) designs, develops and produces high quality fibre composites with excellent performance from 100 to 100,000 pieces. BIONTEC is a full service provider from first idea to serial production in all fields of applications. With its proprietary technology based on the bionic fibre placement complemented with Resin Transfer Moulding or Thermoplastic Composite Forming, BIONTEC is able to place exactly the right amount of fibres with the right fibre orientation at the right location within a component. Thus highest performance at lowest material usage is achieved in various fields of application.

For publishing questions:

Mr Andreas Wild

BIONTEC
Bionic Composite Technologies AG
Flurhofstrasse 150
9000 St. Gallen
Switzerland

Phone: +41 71 242 72 00
Email: composites@biontec.ch
www.biontec.ch

Pictures and Captions:

Number	Potential caption
Picture 01	BIONTEC's process chain: Bionic fibre placement, Preforming, Resin Transfer Moulding or Thermoplastic Composite Moulding
Picture 02	BIONTEC's manufacturing steps from fibre to finished component: Bionic fibre placement, Preforming, Resin Transfer Moulding.
Picture 03	Bionic fibre placement and net shaped manufacturing as performed on an ultra-lightweight clamp.
Picture 04	Functionalization of structural components with i.e. cables, antennas, sensors, LED's combined with sleek optics.
Picture 05	Component for aerospace interiors complying with flammability requirements in medium to high volume.
Picture 06	Lightweight wind blade for power generation on racing yachts (designed by Watt&Sea).
Picture 07	Pick-and-place rocker for high speed electronics manufacturing utilizing lost-core technology for high stiffness to weight ratio.
Picture 08	Stitched fibre layout for torsional ridged wheels.
Picture 09	Structure for novel metrological drone (Leica BLK2FY) including LED's, various antennas for data transfer and cables. The ultra-lightweight structure includes high-modulus carbon fibre, a radome in glass fibre and is finished with EMI-shielding and special radiolucent black paint for clean optics.
Picture 10	Structure for novel metrological drone (Leica BLK2FY) including LED's, various antennas for data transfer and cables. The ultra-lightweight structure includes high-modulus carbon fibre, a radome in glass fibre and is finished with EMI shielding and special radiolucent black paint for clean optics.