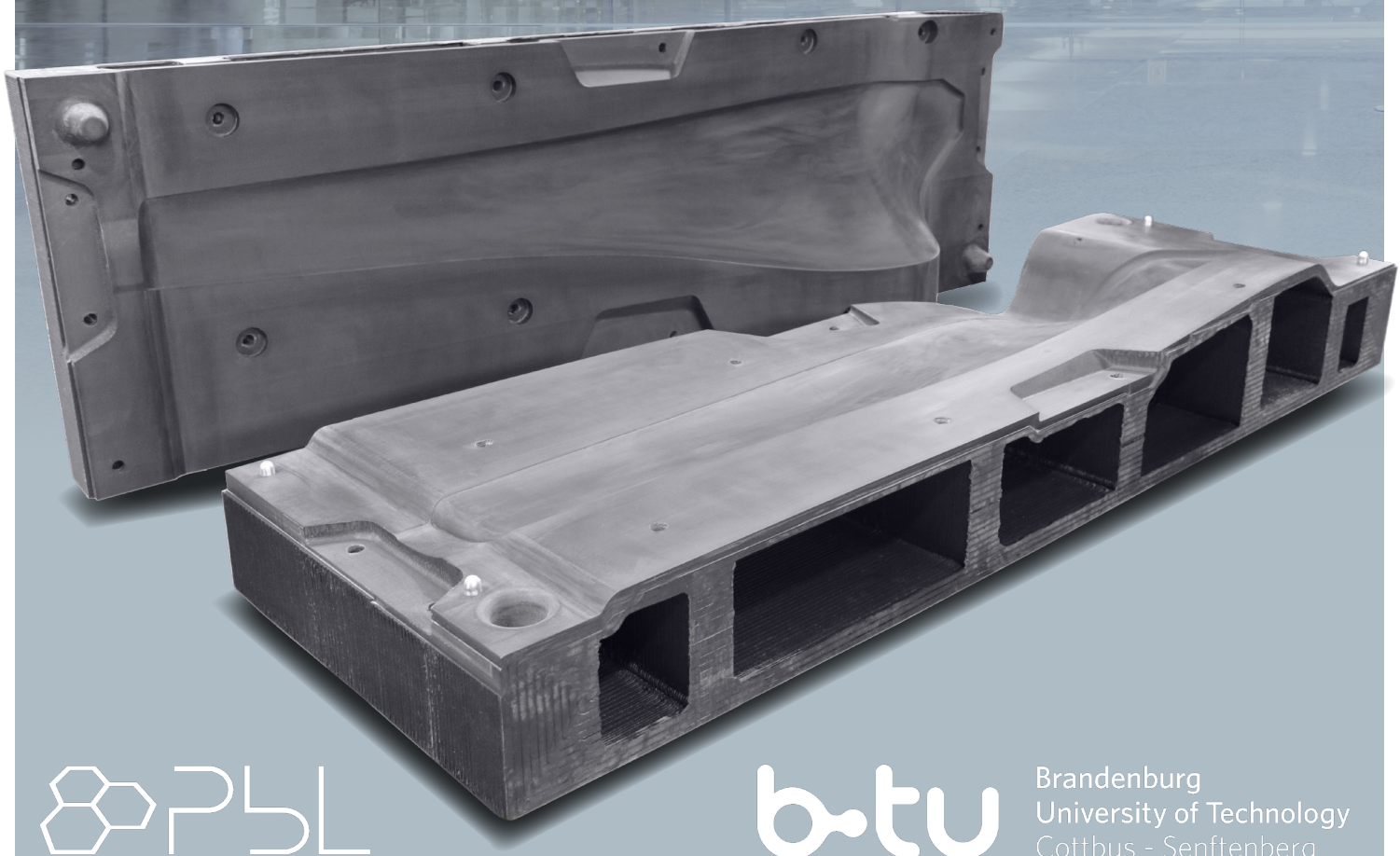
SUPER DISCOVERY 3Dprinter WORKSTATION

MOLD FOR BLADES OF WIND TURBINES

IMPROVING THE MANUFACTURING PROCESS WITH LARGE FORMAT ADDITIVE MANUFACTURING (LFAM) AND THERMOPLASTIC COMPOUNDS

LFAM by direct extrusion of plastic pellets offers the ability to 3D print large parts and prototypes, reduces manufacturing lead times, allows the design of complex geometric parts and increases production with lower costs. LFAM using filled thermoplastic compounds containing glass fiber, carbon fiber, minerals, etc., provides strength and CTE performance which cannot be achieved with unfilled resins.

Cooperation Partner: Chair of Polymer-based Lightweight Design. Brandenburg University of Technology.
Project: 3D printed mold for wind turbine.
Equipment: Super Discovery 3D Printer Workstation™ manufactured by CNC Bárcenas.
Technology: Large Format Additive Manufacturing (LFAM) by extrusion of plastic pellets.
Material: ABS + carbon fiber.



PbL Polymer-based Lightweight Design

b-tu Brandenburg University of Technology Cottbus - Senftenberg

Scope of the project specified by "Polymer-based Lightweight Design" Brandenburgische Technische Universität Cottbus-Senftenberg

PROJECT DETAILS

Improvement of the manufacturing process of various parts for small wind turbines by large-format 3D printing. Allowing wind turbines to start at lower wind speeds and generate electricity at an earlier stage as well as reduce noise emissions and weight.

MATERIAL INFO

ABS + carbon fiber was chosen because its great mechanical properties, strength, great dimensional stability, low coefficient of thermal expansion and contraction. All this becomes pieces with very low deformation, resulting in pieces virtually identical to those designed. In addition, these parts are lighter than those printed with other materials thanks to carbon fiber.

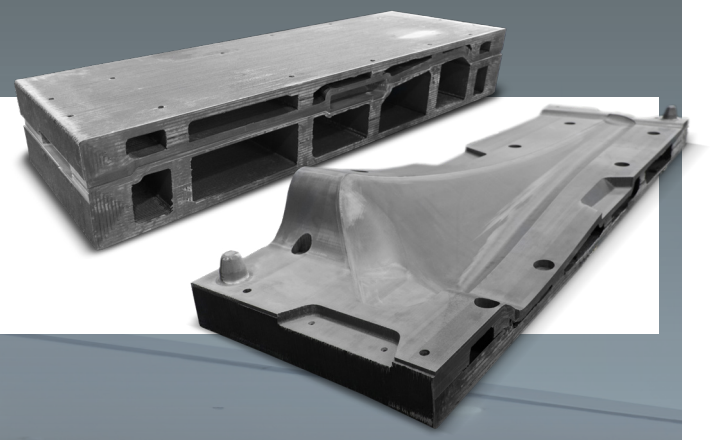
Process and results

Once the preform was 3D printed, the mold was machined.

Results:

· A part was cured without the mold suffering deformations under autoclave's pressure and temperature.

· The pre-impregnated carbon fiber part was properly cured and perfectly copied the geometry of the mold.



SUPER DISCOVERY 3Dprinter WORKSTATION

Equipment

The Chair of "Polymer-based Lightweight Design" has selected the Super Discovery 3D Printer Workstation™, a state-of-the-art equipment manufactured by CNC Bárcenas, for several reasons:

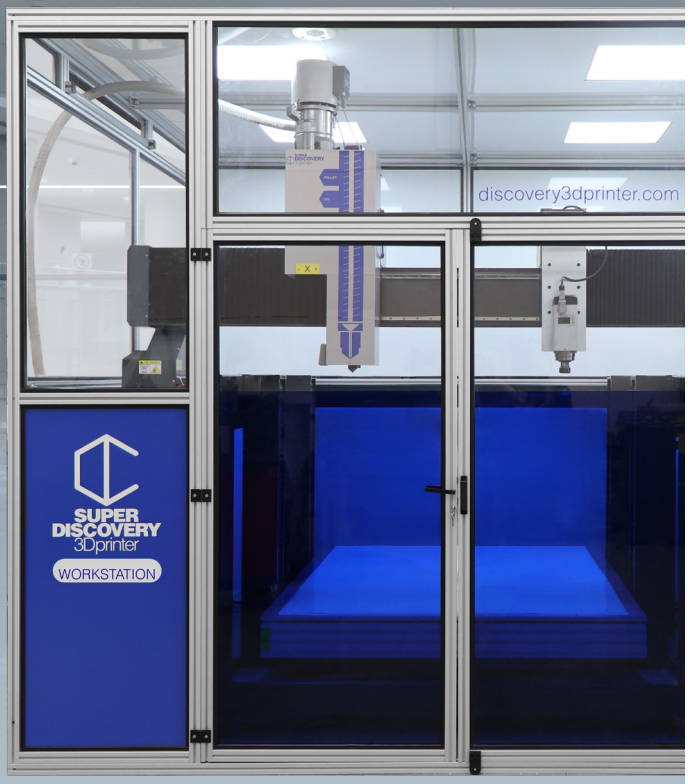
· Wide experience in LFAM, with real success stories in different sectors.

· Broad expertise: More than 10 years manufacturing high-level performance CNC machinery with industrial design and mechanics.

· Strong capabilities for on demand projects with full customization.

· Easy to use, universal and compatible 3D printers.

· Experienced in processing ABS + carbon fiber.



ISO 9001 BUREAU VERITAS Certification

INDUSTRIAL STANDARD CLASSIFICATION CODE
08-A-284-13020079

CONTACT US FOR MORE INFORMATION AND WE WILL STUDY YOUR CASE INDIVIDUALLY

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