STOP METAL THINKING → START ANISOPRINTING

anisoprint

ANISOPRINT COMPOSER
additive manufacturing of continuous fiber reinforced composites for production of extremely strong and lightweight composite material parts

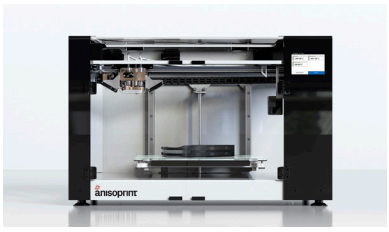
ANISOPRINTING

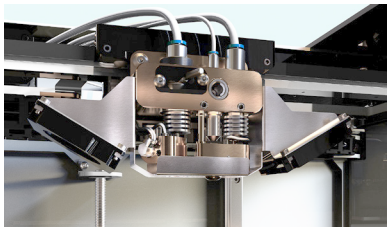
ABOUT THE TECHNOLOGY

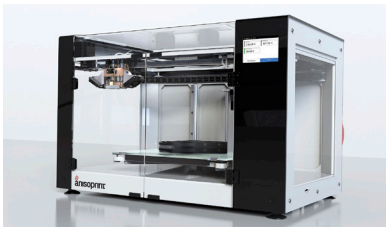
Anisoprinting technology is a new solution for the production of extremely strong and lightweight composite material parts and structures with the a broad range of physical and mechanical characteristics.

The Anisoprint solution is based on patent pending Composite Filament Coextrusion (CFC) technology. Different thermoplastic polymers can be reinforced with continuous fibres, consolidated and cured within a single-stage fully automated process that does not require post processing or tooling. The two-matrix (thermoset+thermoplastic) approach ensures low porosity, good adhesion of fiber to polymer and superior mechanical properties.

Anisoprint enables additive manufacturing of lightweight, complex shape composite material parts with superior mechanical properties for end-use production in aerospace, automotive, robotics and healthcare industries. Disruptive technology aims to replace metal parts with more optimal composite material parts in a broad range of use cases.







DESKTOP DEVICES

	ANISOPRINT COMPOSER A4	ANISOPRINT COMPOSER A3
PRINTING TECHNOLOGY	Composite Filament Co-extrusion (CFC)	
PRINT BED SIZE	297mm x 210mm x 148mm	420mm x 297mm x 210mm
LAYER THICKNESS, MIN.	60 µm	
PRINT-HEAD	Dual nozzle (FFF extruder; CFC extruder with reinforcing filament cutting device)	
NOZZLE DIAMETER, FFF	0.4 mm	
PRINT SPEED FFF	10mm/sec – 80 mm/sec	
PRINT SPEED CFC	1 mm/sec – 10 mm/sec	
PLASTIC FILAMENT DIAMETER	1.75 mm	
COMPATIBLE PLASTICS	Plastics with processing temperatures up to 250°C and the diameter of 1.75 mm: PLA, PET-G, PA, PC, PLA, ABS	
REINFORCING FILAMENT	Anisoprint CCF-1.5K	
WEIGHT	30 kg	40 kg
PRINTER SIZE (LXWXH)	610x400x400	720x690x500
INTERFACE	SD-card slot, USB-Type B	
SLICER	Anisoprint Aura (FFF+CFC); Cura,Slic3r (FFF)	
OS SUPPORT	Windows 7+	

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COMPOSITE CARBON FIBER CCF

Anisoprint CCF is dual-matrix material, comprising a thermoset impregnated CCF reinforcing fiber and a thermoplastic binder matrix. The thermoset matrix ensures good quality impregnation of a reinforcing fiber tow and good adhesion to different types of thermoplastic materials. Different thermoplastic binder materials can be used to achieved desired physical properties, thermal, chemical, environmental resistance or other properties. The material is formed in a process of coextrusion of the CCF reinforcing fiber and thermoplastic filament for in-situ consolidation.

Composite fibre is used to reinforce the plastic during fabrication of the part, that makes the part lighter and harder than aluminium.
The volume ratio of carbon fiber in final product is up to 25%.

The Anisoprint CCF 1.5K is supplied in 750 m fiber spools which is sufficient to fabricate a fully composite 56x56x56 mm cube or a fully composite A3-sized plate with a thickness of 2.9mm.

SLICER SOFTWARE AURA

The special slicer software Anisoprint Aura is included free for the preparation of printing tasks. It allows to slice the 3D model in a given format (STL, STEP, IGES), optimize and tune the reinforcement paths and fiber volume fractions in the different zones of the model.

Aura offers the capability of defining different temperatures for plastic and composite nozzles, setting micro-layers with better thickness tolerances, defining unreinforced printing paths, break-away or dissolvable support structures to be printed with plastic nozzle.

BENEFITS

CONTROL
Change the direction and the volume fraction of the fibers to ensure optimum design.

EASE OF MANUFACTURE
Fabricate the parts that do not require any curing, post-treatment or machining.

AUTOMATION
No special tooling is required; the process is fully automated.

RELIABILITY
The innovation is based on an extrusion type process, a safe and affordable 3D-printing technology.

VERSATILITY
Create optimum designs using a variety of thermoplastic polymer matrices: PA, PETG, PP, PC, PLA, etc.

COST-EFFECTIVENESS
— Consumes 10 times less power than SLS;
— The cost of 1 cm3 of materials is 5 times lower as compared to metal powders;
— The material utilization rate is up to 100%.

CONTACTS

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