

ADDITIVE MANUFACTURING TECHNOLOGIES // AMT **AUTOMATED POST-PROCESSING SOLUTIONS** FOR ADDITIVE MANUFACTURING

## 

OSTPRO SF50 // POSTPRO 3D // POSTPRO DP MAX // POSTPRO DP PRO // POSTPRO DP







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Joseph Crabtree CEO and Founder

## **ABOUT AMT**

AMT is the world's first company focused on developing digital technology solutions for post-processing 3D printed parts.

Developed at the intersection of material science, chemistry, hardware, engineering, robotics, and machine learning, our post-processing technology enhances 3D printed parts to market-ready specifications, enabling every industry to mobilize the power of additive manufacturing.

AMT was formed in 2017 by CEO and Founder, Joseph Crabtree, after he developed the world's first fully automated chemical vapor smoothing solution – PostPro 3D. Since then, AMT's product portfolio has expanded to a range of end-to-end fully automated post-processing solutions.

AMT is headquartered in the UK with a design and manufacturing facility in Hungary, R&D facility in Texas, an office in Taiwan, and multiple resellers across the globe.

## **AMT** UNLOCKS THE SOLUTIONS

Removing barriers through sustainable ip rich technology.

- CE certified
- Certified solutions for all industries
- ◆ No geometrical limitations

- ♠ Automated, scalable, customizable

#### POSTPRO AUTOMATED WORKFLOW



**UNPACKING** 

POSTPRO UP



2-IN-1 DEPOWDERING & SHOT BLASTING

POSTPRO DP POSTPRO DP PRO POSTPRO DP MAX



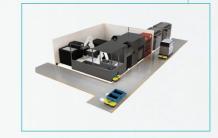
SURFACE FINISHING

POSTPRO 3D POSTPRO SF50



**COLORING** 

POSTPRO COL



DIGITAL MANUFACTURING SYSTEM









## PRODUCTS

## POSTPRO DP

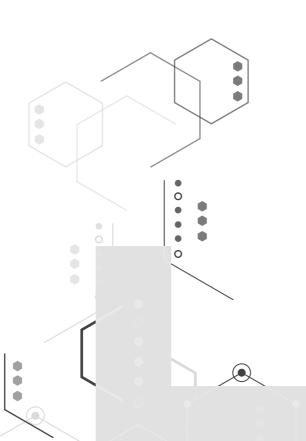
AUTOMATED 2-IN-1 DEPOWDERING & SHOT BLASTING SYSTEM FOR POLYMER POWDER-BED AM PROCESSES

Affordable cleaning and shotblasting system that further reduces manual intervention in the process chain. Suitable for all common abrasives. Features include a large basket with 2 spray nozzles, ionization unit to reduce static electricity, and ventilator system with high extraction rate to prevent windows from getting dusty. CE and ATEX certified.

Commercially available since Q2 2020.



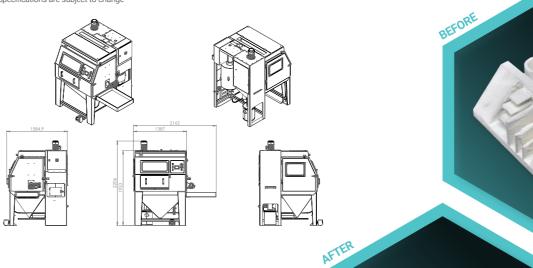




#### ◆ TECHNICAL SPECIFICATIONS

		· '
Description	US	EU
External dimensions (w x d x h):	57 x 63 x 87 in	1.626 x 1.600 x 2.206 mm
Effective blast room (I x w x h):	49 x 40 x 37 in	1.320 x 940 x 1060 mm
Working height:	33 in	725 mm
Door openings (w x h) (2 pieces)	35 x 31 in	835 x 825 mm
View window (w x h):	26 x 10 in	656 x 266 mm
Maximum load cabinet:	770 lbs	350 kg
Basket with lining: • Dimensions • Approx. volume (depends on size and form of products) • Maximum load	Ø 24 x 16 in 8 gallons 33 lbs	Ø 600 x 400 mm 30 liter 15 kg
Blast guns basket (2 pieces):	Hardened blast guns with boron carbide nozzles (ø 0.31 in)	Hardened blast guns with boron carbide nozzles (ø 8 mm)
Filter cartridges (polyester, M-class):	2 filter cartridges of 43.05ft² each	2 filter cartridges of 4 m <sup>2</sup> each
Capacity ventilator:	3522 gpm	800 m³/h (1,1 kW)
Dust emission:	< 0.0018ppm	< 1,8 mg/Nm <sup>3</sup>
Atex classification:	Class II 3/-D T257°F	Class II 3/-D T125°C
Lighting:	LED light 50 Watt	
Electrical connection:	3 x 480V, 60 Hz, earth and zero	3 x 400V, 50 Hz, earth and zero
Total power consumption:	1,3 kW	
Colours powder coating:	Light and dark grey (=RAL 7040 / 7015)	
Pneumatic connection/pressure	G 1/2" air supply hose, 6 bar	G 1/2" air supply hose, 6 bar
Min. Pneumatic flow rate	Minimum 71.3 cfm	Minimum 2.02m³/min
Cabin weight (complete):	1,257 lbs	570 kg

Specifications are subject to change



## POSTPRO DP PRO

AUTOMATED
INDUSTRIAL
DEPOWDERING & SHOT
BLASTING
SYSTEM FOR POLYMER
POWDER-BED AM
PROCESSES



#### POSTPRO® DEPOWDERING (DP) AUTOMATED POST-PRINT CLEANING

#### DEPOWDERING & SURFACING (2-IN-1)

- Reduces time and labor cost
- Reduces scrap rate
- Ensures repeatable results
- Primes surfaces for secondary treatments e.g. chemical smoothing
- Allows different types of media to depowder and/or surfacing/peening
- All materials and geometries

Commercially available since Q2 2020.

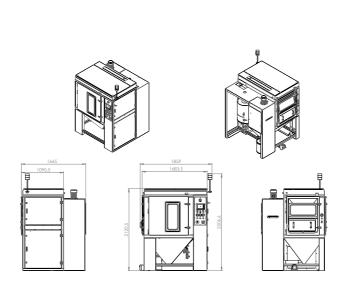
#### PRODUCTION-READY

- Increases throughput: large batches in 30 minutes or less
- Stores batch settings (material, build, or partgeometry specific)
- Adjustable angle of rotation for efficiency
- Reliable air filtration design extends life of media
- Ergonomic operator-friendly design
- Easy to install, use, and low maintenance
- CE and ATEX certified

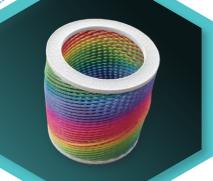


#### ◆ TECHNICAL SPECIFICATIONS

		~ ~ ~
Description	EU	US
External dimensions (w x d x h):	1.700 x 1.800 x 2.500 mm	67 x 71 x 98 in
Door opening front door:	1.100 x 970 mm	44 x 39 in
Door opening manual blasting:	875 x 970 mm	35 x 39 in
Blasting Chamber Dimensions:	1287 x 1050 x 1100 mm	51 x 42 x 44 in
Manual Blasting Area:	420 x 1000 x 1100 mm	17 x 40 x 44 in
Basket with lining: •Dimensions •Approx. volume (depends on size and form of products) • Maximum load	Ø 500 x 320 mm 20 liter 20 kg	Ø 20 x 12.5 in 20 liter 44 lbs
Blast guns basket (2 pieces):	Hardened blast guns with boron carbide nozzles (ø 8mm)	Hardened blast guns with boron carbide nozzles (ø 0.3)
Filter cartridges (polyester, M-class):	2 filter cartridges of 4 m <sup>2</sup> each	2 filter cartridges of 4 m <sup>2</sup> each
Door opening front door:	1.100 x 970 mm	44 x 39 in
Capacity ventilator:	900 m <sup>3</sup> /h (1,1 kW)	52cfm (1.1kW)
Dust emission:	< 1,8 mg/Nm <sup>3</sup>	< 1,8 mg/Nm <sup>3</sup>
Option: HEPA filter with dust emission of:	< 0,1 mg/ Nm <sup>3</sup>	< 0,1 mg/ Nm <sup>3</sup>
Atex classification:	class II 3/-D T125°C	class II 3/-D T125°C
Lighting:	LED light 50 Watt	LED light 50 Watt
Electrical connection:	3 x 400V, 50hz, earth and zero, 25A	3 x 480V, 60Hz earth and zero, 25A
Total power consumption:	3,0 kW	3,6 kW
Min. Pneumatic flow rate:	Minimum 2.02m³/min	Minimum 71.3 cfm
Cabin weight (complete):	ca. 1.000 kg	Ca. 2205 lbs
Pneumatic connection/pressure:	3/4 inch air supply hose, 6 bar	3/4 inch air supply hose, 6 bar







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## POSTPRO DP MAX

**FULLY AUTOMATED** INDUSTRIAL 2-IN-1 DEPOWDERING & SHOT BLASTING SYSTEM FOR MAXIMUM THROUGHPUT



#### **ADVANTAGES OF POSTPRO DP MAX**

- Powered by continuous tumble belt technology for maximum throughput and part size flexibility.
- Designed for large parts and / or large batches of parts.
- Automated and ergonomic loading and unloading to and from the transport container.
- Processing volume of up to 63 liters.
- Moving nozzles speeds up the process for maximum throughput.

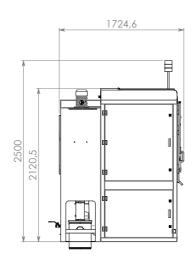
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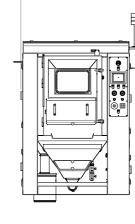


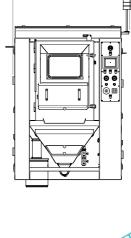
- Built in cyclone for efficient dedusting and cleaning of the media.
- Compact design to reduce floor space.
- · Safe and robust industrial design.
- Digitally connected to communicate with other EMS.
- Low maintenance cost.
- ATEX certified.

#### ◆ TECHNICAL SPECIFICATIONS

Description	EU	US
External Dimensions	1,617 x 1,725 x 2,500 mm	64 x 68 x 99 in
Front Door Opening	770 x 1070mm	30 x 42 in
Processing Belt - Dimensions	Ø590 x 770mm	Ø23 x 30 in
Processing Belt - Volume	63 Liter (part dependent)	63 Liter (part dependent)
Processing Belt - Maximum Load	20Kg	44 lbs
Blast Guns	3 x Hardened blast guns with boron carbide nozzles (ø 8 mm	3 x Hardened blast guns with ) boron carbide nozzles (ø 8 mm)
Filter Cartridges	2 x Polyester, M-Class, 4m²	2 x Polyester, M-Class, 4m <sup>2</sup>
Ventilator Capacity	800 m³/h (1,1 kW)	52 cfm (1,1 kW)
Dust Emission with HEPA Filter	< 0,1 mg/ Nm³	< 0,1 mg/ Nm³
Dust Emission without HEPA Filter	< 1,8 mg/Nm³	< 1,8 mg/Nm³
ATEX Classification	class II 3/-D T125°C	class II 3/-D T125°C
Electrical Connection	3 x 400V, 50 Hz, earth and neutral, 25A	3 x 480V, 60 Hz, earth and neutral, 25A
Total Power Consumption	3.0kW	3.0kW
Minimum Pneumatic Flow Rate	3.0m³/min	106 cfm
Cabin Weight	1,250Kg	2,756 lbs







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## POSTPRO 3D

PATENTED CHEMICAL **VAPOR SMOOTHING TECHNOLOGY** FOR FINISHING THEROMPLASTIC POLYMER PARTS

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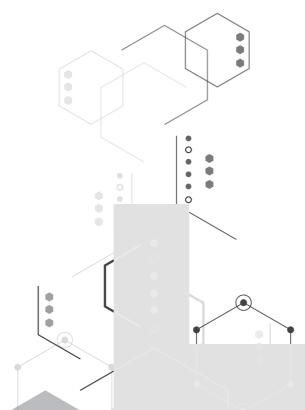


PostPro3D is an enabling technology that achieves for the first time a surface finish that matches injection molding techniques by using a series of predefined parameters.

PostPro3D reduces lead-time, cost of manufacture, operational & maintenance costs providing the 'missing piece' in the digital manufacturing chain.

Commercially available since 2017.





#### ◆ TECHNICAL SPECIFICATIONS

			/
Capacity	US	EU	
Chamber Dimensions, W × D × H	16.0" × 24.0" × 15.7"	410mm × 610mm × 400mm	
Consumable Cannister Volume	940 in <sup>3</sup>	15,400 cm <sup>3</sup>	
Nominal Chamber Temperature	Maximum 158°F	Maximum 70°C	
Dimensions	US $(w \times d \times h)$ (in)	EU (w × d × h) (mm)	
PostPro3D Machine	71.9 × 54.7 × 54.4	1826 × 1388 × 1380	
Chiller Unit	28.2 × 37.2 58.8	715 × 945 × 1492	
Extraction Unit	24.6 × 31.5 × 47.2	626 × 801 × 1197	
Recommended Operating Space	236 × 177	6000 × 4500	
Weight	US (lbs.)	EU (kg )	
PostPro3D Machine	2204	1000	
Chiller Unit	386	175	
Extraction Unit	320	145	
Power	US	EU	
Power Supply	480V 60Hz 3-Phase + PE	400V 50Hz 3-Phase+ PE	
Permissible Voltage Fluctuation	±10%	±10%	
Typical Power Consumption	12.4kW	9.7kW	
Maximum Power Consumption	28.5kW	23kW	
Mains Fuse Protection	3 x 32 A (characteristic C)	3 x 32 A (characteristic C)	
Rated Short-Circuit Current	10kA	10kA	

#### POSTPRO® SURFACE SMOOTHING AESTHETICS & PERFORMANCE

#### **EASY TO ADOPT**

- Affordable
- Small foot-print
- Meets strict HSE standards
- UL & CE certified
- Low maintenance
- Easy to install and use
- Multi industry compatibility
- Broad material compatibility

#### PRODUCTION READY

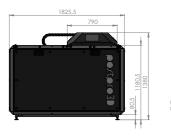
- Safe and fast-acting chemistry
- Low operating costs (cost/run)
- Large chamber size
- Short cycle time
- Repeatable
- Fully automated
- Ability to integrate / connectivity



#### ADDED VALUE

- Enhanced aesthetics
- Increased durability
- Improved properties
- Dimensional accuracy
- Tunable surface roughness
- · Sealed surface, no porosity
- Easier to color and coat







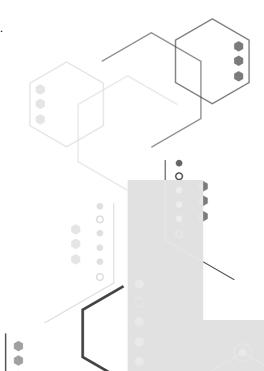
## **POSTPRO SF50**

AUTOMATED SURFACE
FINISHING SOLUTION
THAT OFFERS ALL THE
ADVANTAGES OF THE
POSTPRO3D MACHINE,
BUT IN A MORE
COMPACT UNIT FOR
SMALLER PRODUCTION
RUNS, RESEARCH
AND DEVELOPMENT
PROGRAMS, AND
DESIGN STUDIOS

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Commercially available since 2021.



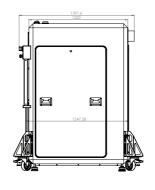


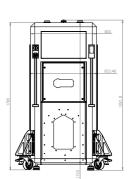
#### ◆ TECHNICAL SPECIFICATIONS

	EU	US
External Dimensions (WDH)	824 x 1398 x 1822 mm	32.5 x 55.5 x 72 in
Weight	800 Kg	1,765 lbs
Reccomended Operating Area	2,350 x 3,200 mm	92.5 x 126 in
Capacity		
Process Chamber Dimensions (WDH)	400 x 300 x 400 mm	15.7 x 11.8 x 15.7 in
<b>Process Chamber Volume</b>	48 Litres	48 Litres
Consumable Canister Volume	10 Litres	10 Litres
Power		
Single Phase	220 - 240V, 16A, 50/60Hz, (L+N+PE)	
Three Phase	3 x 400V, 16A, 50/60Hz, (L1+L2+L3+N+PE)	

#### FEATURES INCLUDE:

- Safety Circuit: Light curtain and front mounted E-Stop button.
- User Interface (HMI): 1080p Full HD. 21.5" touch screen.
- Consumable Management: RFID canister recognition and fool proof connections.
- Multiple Consumables: Can be used with all of AMT's processing consumables.
- Small Footprint: Reduced footprint and working area requirements.
- Chamber Loading: Front loading at an ergonomic height.
- User Access: RFID controlled user access.
- Industry 4.0 Ready: Built-in capability to connect with MES/ERP systems.





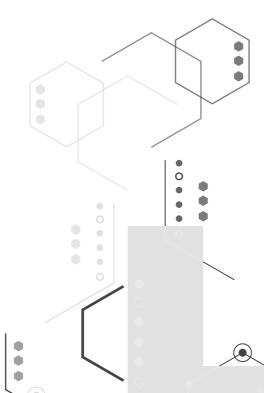


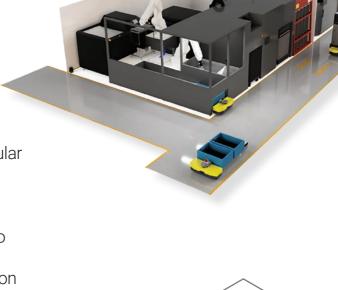
## DIGITAL MANUFACTURING **SYSTEM**

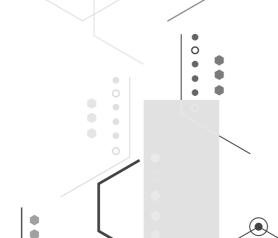
#### **ENABLING PRINT TO** PRODUCT ADDITIVE MANUFACTURING

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AMT's DMS is a scalable modular system that is fully automated - enabled by AI and advanced robotics — with a quality management system built in to provide a real end-to-end, fullyautomated, lights-out production solution for 3D printed parts that competes well with injection molding.









#### **CUSTOMIZED ON DEMAND**

#### AUTOMATED LOADING/UNLOADING

Parts with different geometries can be automatically loaded/unloaded into/from the Post-Pro Chemical Vapor Smoothing machines.

#### **AUTOMATED INSPECTION**

Parts are individually inspected to guarantee part quality and process repeatability.

#### **AUTOMATED SORTING**

Parts are sorted into bins to facilitate downstream processes.

#### DATA ACQUISITION

Traceable process and part parameters facilitate troubleshooting and system maintenance.

#### INTEGRATION

Industry 4.0 ready with workflow integration capability.

#### **LIGHTS-OUT OPERATION**

24-hour operation allows up to 27 PostPro3D runs per day.





## ORGANIC FINISHING AGENTS

AMT'S PORTFOLIO OF GREEN, BIO-RENEWABLE SOLVENTS WERE DESIGNED SPECIFICALLY TO FIT THE REQUIREMENTS FOR POST-PROCESSING OVER 100 THERMOPLASTIC MATERIALS.



#### **FINISHING AGENT PORTFOLIO**

#### **FA 326**

AMT's core consumable, formerly known as BLASTX (Boundary Layer Automated Smoothing Technology), designed for post-processing over 100 thermoplastic materials. Compatible with Rigid Plastics, Composites, and a range of Elastomers. Commercially available since 2017.

#### **FA 26**

AMT's new generation consumable designed specifically for post-processing Lubrizol M95A and other TPU materials. Commercially available since Q2 2021.

#### FA 9202

AMT's new generation consumable designed specifically for post-processing Polypropylene material. Commercially available since Q2 2021.



# PRINTER & MATERIAL AGNOSTIC DESIGNED FOR ANY INDUSTRY

#### PRINTER AND MATERIAL COMPATIBILITY

Powder Bed Fusion — SLS • MJF • HSS

Extrusion FFF • FGF • HSE

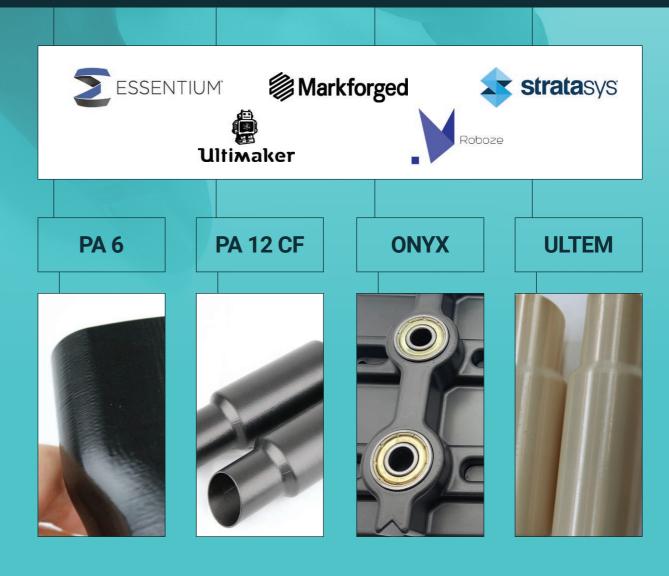
Rigid Plastics — PA6 • PA11 • PA12 • ABS • PC • Polypropylene

Elastomers TPU • TPE • SBC • PEBA
Composites Glass & Carbon-filled

### POWDER BED FUSION // MJF • SLS • HSS

### EXTRUSION // FDM • FFF • HSE





# BROAD HORIZONTAL ADOPTION ACROSS MULTIPLE INDUSTRIES

#### **INCREASE THROUGHPUT AND LOWER COST**

Our technologies generate up to a +200% return to our customers on their initial investment, when compared to manually post processing a part.

#### **SEALED SURFACES**

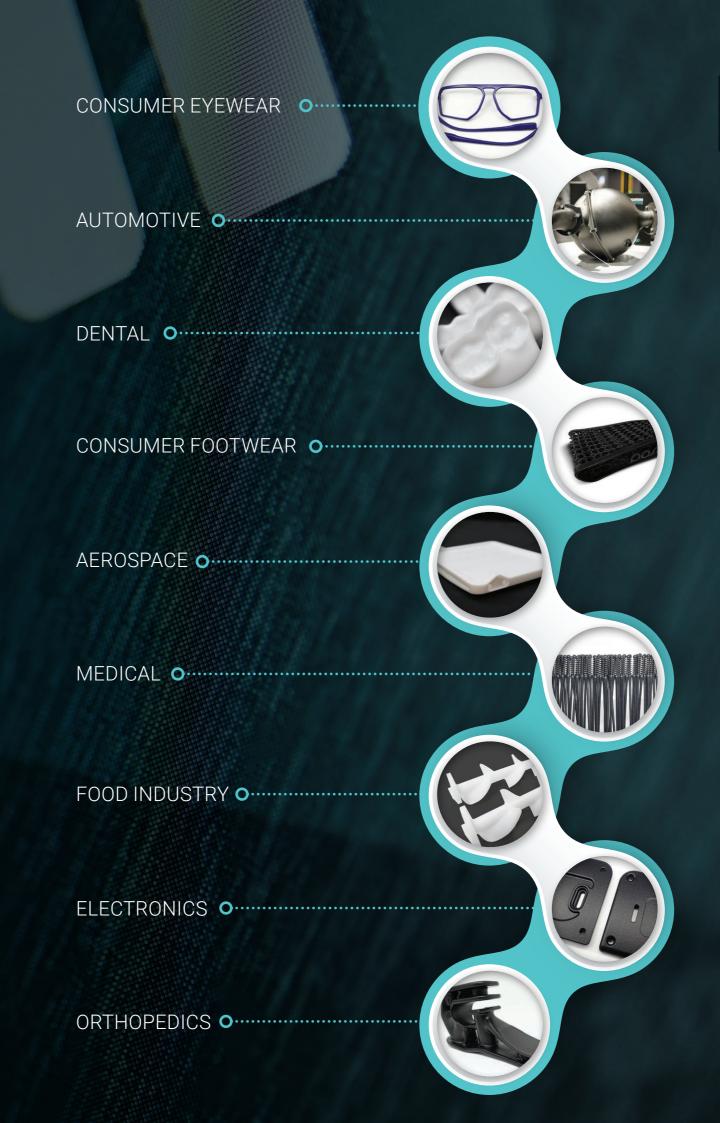
3D printed parts are porous and rough. Our technologies clean, smooth and seal the surface. This enables the ability to pass regulatory testing for end-use in various industries.

#### **FINISH AND ACCURACY**

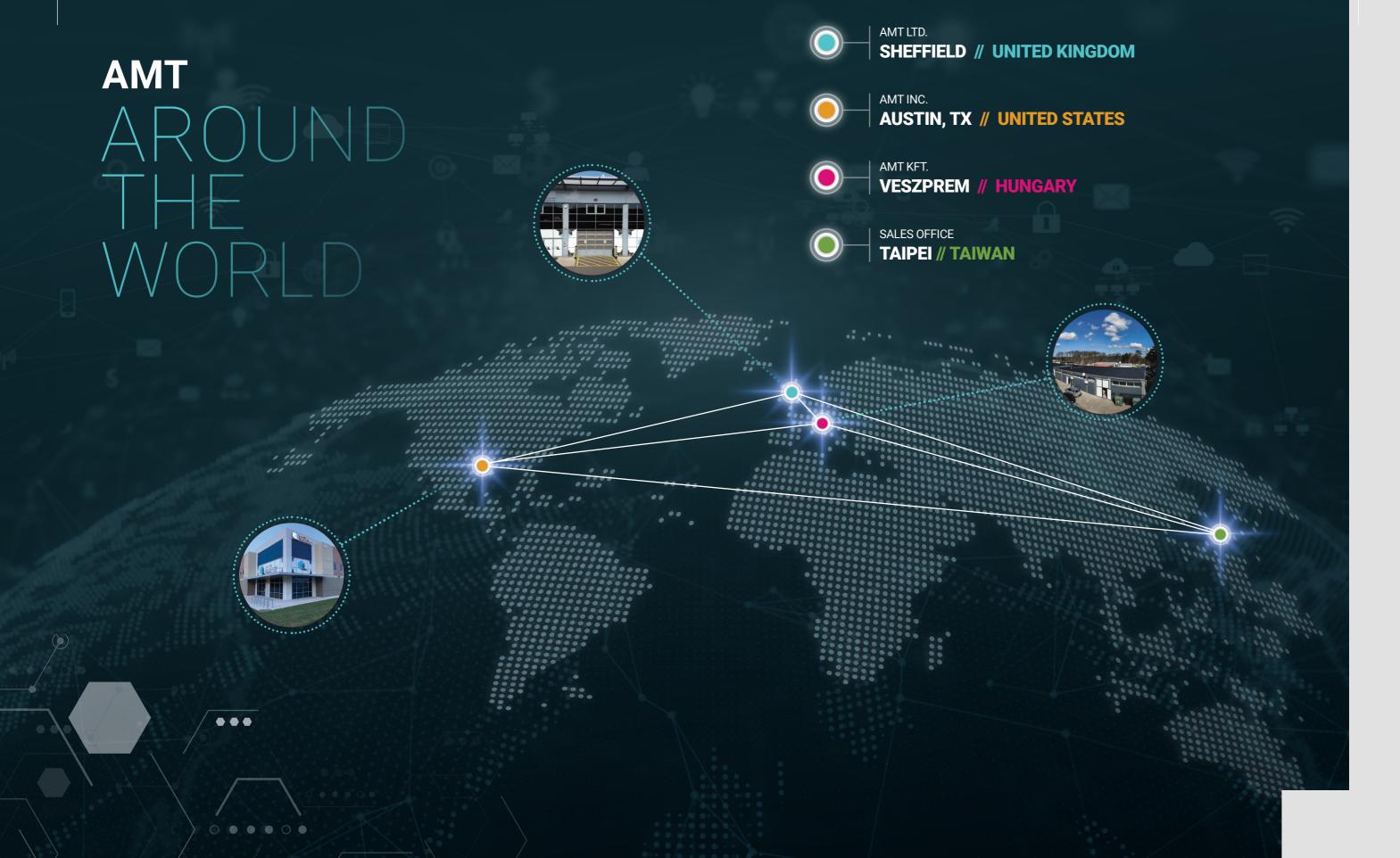
Our technologies reduces the surface roughness of a 3D printed part to that equivalent of an injection molded or CNC milled part. The process does not affect the dimensional stability of the part.

#### **IMPROVED PROPERTIES**

Our technologies improves the anisotropy of the printed part, while at the same time improving elongation at break.









## **CONTACT US** for more information

### NORTH AMERICA



LUIS FOLGAR EVP Technology GTM Strategy & Americas luis@amtechnologies.com



BRAD DUERMIT

AMER

Market Director

bradduermit@amtechnologies.com



ALYSSA WELCH
Global Marketing
Manager
alyssawelch@amtechnologies.com



LAUREN CAIN
Application Engineer
AMER
laurencain@amtechnologies.com



JOSEPH CRABTREE
Founder & CEO
joseph@amtechnologies.com

**UK & EUROPE** 





MARIANA CABRERA
Application Engineer
EMEA
marianacabrera@amtechnologies.com



GAVIN MINTON
Commercial Operations
Manager
gavin@amtechnologies.com



**APAC** 

DAMSON LAI

APAC
Market director
damsonlai@amtechnologies.com



YING-TING GUO

Application Engineer
APAC

yingtingguo@amtechnologies.com

