

NEWSLINE

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PROTECTIVE EQUIPMENT FROM 3D PRINTERS
FRAUNHOFER IGCV SUPPLIES PROTECTIVE EQUIPMENT MADE VIA 3D PRINTERS
TO UNIVERSITY HOSPITAL AUGSBURG



Fraunhofer Institute for Casting, Composite and Processing Technology IGCV

For more than a week, the Institute for Materials Resource Management at the University of Augsburg has been supplying the University Hospital Augsburg with protective masks from 3D printers.

In order to meet the enormous demand for absolutely necessary protective equipment for the needs of hospital staff, a call for support was sent to cooperation partners - Augsburg University of Applied Sciences and Fraunhofer IGCV are stepping in.



The Fraunhofer Institute for Casting, Composite and Processing Technology IGCV, together with the Institute for Materials Resource Management of the University of Augsburg and the Augsburg University of Applied Sciences, is supporting the Augsburg University Hospital in the 3D printing of protective equipment for hospital staff to reduce the risk of infection.

Fast communication in the research network:

Production of 3D-printed parts accelerates in the shortest possible time

Without further ado, an internal university group searched for possibilities of manufacturing via 3D printing. Prof. Dr. Markus Sause and Prof. Dr. Kay Weidenmann of the Institute for Materials Resource Management at the University of Augsburg immediately agreed and pulled out all the stops to start production as quickly as possible. In order to provide as many protective masks as possible in the shortest possible time, an appeal was also made to existing cooperation partners. They found what they were looking for in their direct colleague Prof. Dr. Johannes Schilp, Professor of Production Informatics at the University of Augsburg and Head of the Processing Technology Department at the Augsburg Fraunhofer IGCV: Max Horn, research associate at the Fraunhofer Institute, and

Paul Dolezal from the FabLab (production laboratory) at Augsburg University of Applied Sciences immediately promised their help. "Thanks to the excellent cooperation of our team, the first parts were produced in our laboratory for additive manufacturing just a few hours after the first telephone call," Max Horn recalls. "With the support of the Augsburg University of Applied Sciences and the Fraunhofer IGCV, the production capacity of 50 masks per day could be significantly increased," Markus Sause is pleased to report.



Protective equipment from the 3D printer



Manufacturing process: Fused Deposition Modeling (FDM)



Protective masks for Augsburg University Hospital

Printing masks with Fused Deposition Modeling (FDM)

Fused Deposition Modeling (FDM) was selected as the manufacturing process for the face protection. This means that the mask is created by forcing fusible plastic through a nozzle and applying it in layers in individual lanes. In addition to an extensive laboratory for metal-based additive manufacturing, the Fraunhofer IGCV operates a new laboratory unit with various FDM printers. Due to the simplicity of the process and its great flexibility, it is particularly suitable for prototypes and sample components. "However, the masks produced are by no means only illustrative objects", adds Georg Schlick, Head of the Components and Processes Department at the Fraunhofer IGCV. The team processed durable polymers for the parts, which have good resistance to the disinfectants used in the hospital. This results in high-quality components that are ideally suited for multiple use.



Fraunhofer IGCV supplies AM-Face shields to the University Hospital Augsburg

Additive manufacturing for flexible production

In the meantime, some bottlenecks have been overcome: The Institute for Materials Resource Management at the University of Augsburg is switching back to production processes for the manufacture of face masks that are better suited for the production of large quantities. "The great strength of additive manufacturing lies rather in the production of very complex components with smaller quantities," explains Matthias Schmitt, group leader for additive manufacturing at the Fraunhofer IGCV. "But 3D printing also enables us to act at very short notice and to compensate for lack of capacity for almost any component as required," Schmitt continues. Thanks to the flexibility, motivation and expertise of all cooperation partners, a complete production and supply chain for the face masks was implemented within a few days. Georg Schlick therefore emphasizes the need for good networking and rapid exchange between the research institutions. "The close networking within the 3D printing community enables short communication channels and fast action. This can save lives in this case."

Quelle:

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