

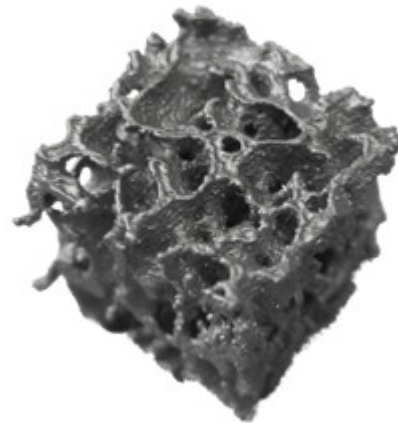
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LayerWise, what's in a name?

LayerWise is an innovative company active in Additive Manufacturing of complex metal parts. Layer-by-layer, the most **complex parts** can be manufactured directly from CAD data, by successively melting very thin metal powder layers on top of each other. The resulting parts have **mechanical and physical properties that are almost identical to the corresponding bulk materials**.

Since LayerWise can process a variety of **biocompatible alloys** we are able to develop and manufacture **patient-specific implants** besides standard implants and surgical instrumentation.



Trabecular bone scaffold produced by SLM of titanium powder

Medical applications of Additive Manufacturing

Additive Manufacturing technology is perfectly suited to create **patient specific implants** due to its ability to produce complex metal parts directly from digital data. Starting **from medical imaging data** (CT, MRI), the most complex implants (or instruments) can be designed and produced. Since the complete design and production chain is digital, very short **throughput times** may be realized, **typically a few days**.

Examples of medical applications of our Additive Manufacturing technology are:

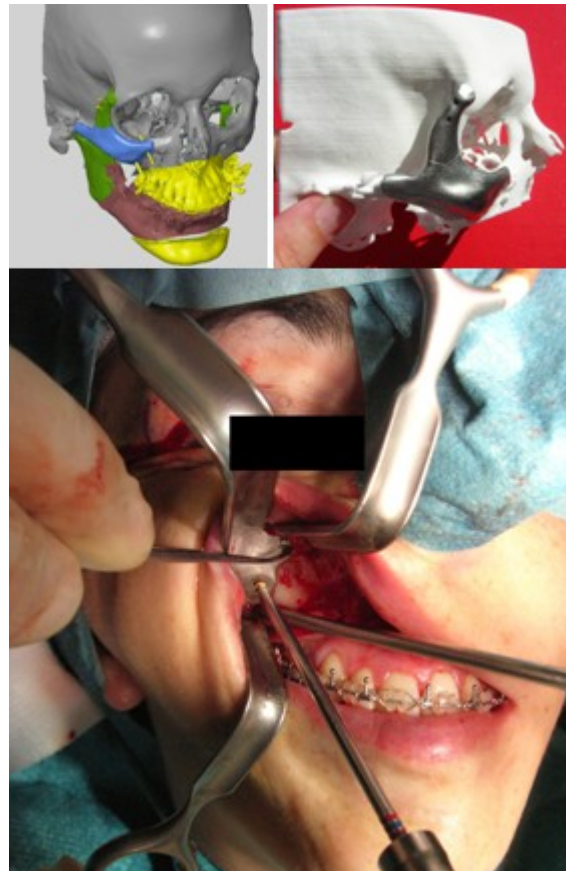
- Dental implants
- Cranial implant
- Maxillofacial implants
- Orthopedic implants
- Trauma fixation

Besides these patient specific implants, Additive Manufacturing technology is also well suited for the production of certain types of standard implants and medical and surgical instrumentation.

Case Study - CMF: orbital implant using LayerWise Rapid Manufacturing

The facial profile of this female patient, was corrected by performing a mandibular and maxillary osteotomy. At the same time, the patients right zygomatic bone was corrected by implanting a corrective titanium implant. The design of the implant was performed by LayerWise, based on the facial symmetry of the patient.

In order to allow a minimal-invasive procedure, the implant was designed and manufactured as a two-piece implant that could be assembled during surgery. The largest (male) part was inserted by tunnelling procedure, while the smaller (female) part, was inserted through a small incision near the patient's eyebrow. Once in place, both parts of the implant were fixed using standard mini-screws. Thanks to the perfect fit of the male and female component, and the precise patient-specific design, the whole procedure could successfully be performed within a short time.



Product preview: DentWise patient specific dental prostheses

DentWise, the dental product line of LayerWise offers new possibilities for the manufacturing of dental restorations. DentWise implant supra-structures are modelled based on a digitized model of the implant setup and the corresponding tooth arrangement. These digitally designed structures are then produced according to a patented procedure, to achieve a 20 micron fit accuracy at the implant interfaces.

Since the additive manufacturing technology of **LayerWise** offers a **complete design freedom**, **integrated surface textures** can be digitally applied on the models, to create an **improved surface retention**. More info can be found on www.dentwise.eu.



What's new at LayerWise: ISO 9001 and ISO 13485 certification

The Quality Management System of LayerWise was recently awarded with **ISO 9001** and **ISO 13485** certification. This reflects our aim for continuous improvement, and our efforts to work according to the highest quality standards. By extending our Quality Management System to the requirements of the ISO 13485 standard, LayerWise will be able to further expand its medical services by offering our engineering and production services to customers in the medical area.

Meet LayerWise at MedTech Stuttgart

LayerWise exhibits at the Medtech fair in Stuttgart from 23th until the 25th of March. Hall 4, Stand 2485. [Register here](#) to get free entrance for the exhibition.

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