

# Research project

## *Enabling Industries Through Novel Bioresorbable Medical Devices*



### Motivation and Relevance

- The insertion of conventional implants is cost-intensive, burdens the patient and often leads to follow-up operations
- Patient-specific and bioresorbable metallic implants are a more efficient alternative that can meet the high demands of medical devices

### Approach

- LPBF manufactured Zinc alloys show promising results in the field of resorbable bone implants
- By adding small amounts of magnesium to the zinc alloy, a grain refinement is created and thus the mechanical properties can be tailored

### Results

- Additive manufacturing enables tailored implants with a customized scaffold structure to be manufactured cost-effectively
- The filigree structure of the implant functions in the human body as a skeleton and load bridge for the regrowing bone tissue
- The novel zinc-magnesium alloy is currently being investigated in medical studies regarding its biocompatibility and degradation behavior

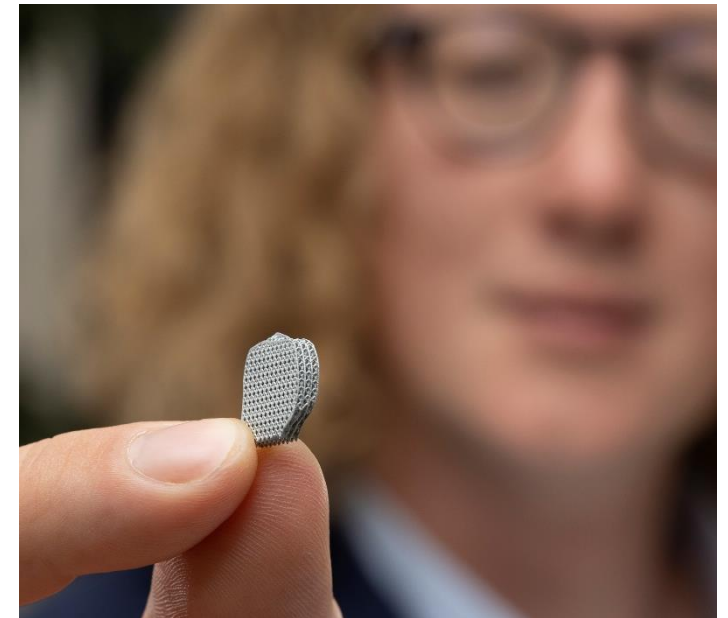
### Research Area

- Medical Engineering, Zink, Magnesium, Bioresorbable Alloys, Scaffold, Lattice Structure

### Partners



### Picture



### Contact



**Maximilian Voshage**

maximilian.voshage@

dap.rwth-aachen.de

www.dap-aachen.de