An overview of ceramic AM with focus on bioceramics and powder bed technologies

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The presentation will start with an overview of ceramic additive manufacturing (AM) technologies and will discuss the potential of AM in the field of bioceramics.

The presentation will then focus on two possible use cases of binder jetting technologies.

In the first example, standard powder-based binder jetting is used to manufacture a porous implant design for large scale bone defects. The related challenges in the process chain will be discussed, from powder synthesis to sintering and characterization of the printed part.

In the second example, the LSD-print slurry-based binder jetting technology is presented as a possibility to adapt powder-bed AM to produce dense ceramic parts. The use case will focus on an application in the field of dental ceramics, specifically for the manufacturing of patient individualized single tooth restorations (veneers, crowns) with a high throughput process chain.