



## Selective laser sintering of three-dimensional geometries and structures of quartz glass - possibilities and limits

**Andrea Barz**

*Ernst-Abbe-University of Applied Sciences Jena, Germany*

### **Abstract:**

Additive processes offer the possibility to create complex and three-dimensional geometries with great freedom of design. This technology is already very well developed for metallic materials and plastics. For silicate materials this innovative technology is still in its infancy. The special material properties of these hard and brittle materials are one reason for this. A new selective laser sintering process for glass powder is presented in this paper. With this process compact glass bodies can be built up, which have a residual porosity of about 25%. The maximum printable footprint of the building platform is 120 mm so far. In the course of the investigations a test geometry was designed to evaluate the resolution and the current structural limits of the process. As a result, the various printed geometries are analysed and metrologically evaluated. A comparison is made with the sintering processes for metals and plastics. Possibilities and limits of this novel sintering technology are evaluated and the future potential is shown.

### **Biography:**

Andrea Barz is a scientific assistant and made her PHD in 1996 at the Friedrich - Schiller - University Jena.



### **Publication of speakers:**

1. Andrea Barz et al; Investigation about the effects of tulathromycin (Draxxin (R)) against Mycoplasma hyorhinis in a field trial , Jan 2012.
2. Andrea Barz et al; Investigation of the prevalence of swine torque teno virus in Austria, Mar 2011
3. Andrea Barz et al; Paralysis in pigs caused by organohosphates - A case study, Apr 2010
4. Andrea Barz et al; Examination of different options for combined administration of an NSAID (Meloxicam) and iron for piglets being castrated, Jan 2010
5. Andrea Barz et al; Investigation about the use of analgesics for the reduction of castration-induced pain in suckling piglets, Sep 2009

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