

1 SLS sintered sole made from TPU,  
codeveloped with Fraunhofer UMSICHT.

2 TPU Test Rig.

## SLS Test Rig

### FLEXIBLE SLS MACHINE FOR THE EFFICIENT DEVELOPMENT OF NEW SLS MATERIALS

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Only a limited range of materials is available for selective laser sintering (SLS) today.

The development of new materials is very time-consuming. During the early stages of development, only a limited amount of sample material is available for the initial principal tests, yet many test runs are necessary due to the high number of parameters.

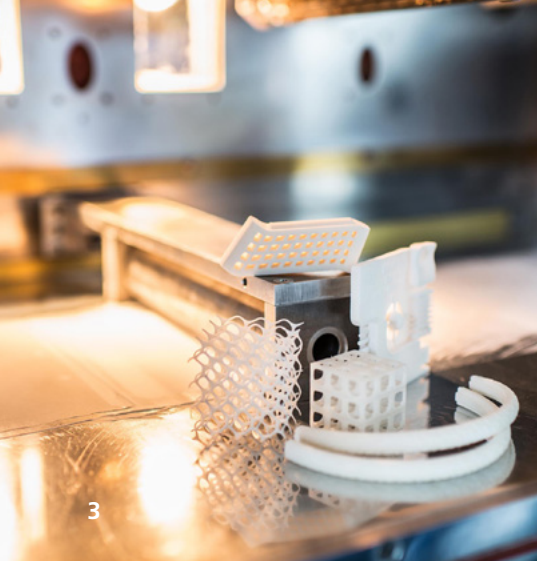
Our new "SLS Test Rig" was developed for the efficient testing of such small samples. The rig offers all the process conditions of production machines, making upscaling to such machines easy.

#### Keywords

- Efficient material development for SLS materials
- Produce initial samples with only a minimum amount of powder
- Easy upscaling to production systems
- Platform for the testing of different components (e.g. new powder handling)
- Free choice of parameters

#### Industrial sectors

- SLS material developers
- Polymer producers
- Mechanical engineering
- Medicine and dental



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3 View of the build chamber

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### Technical Specifications

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- Minimum amount of powder: 500 g
- Part bed temperature: 250 °C
- Build envelope: 150 x 150 x 150 mm<sup>3</sup>
- usable: 110 x 110 x 130 mm<sup>3</sup>
- CO<sub>2</sub> laser: 60 W
- Scan velocity: up to 15 m/s
- Variable spot size
- Easy to clean
- Nitrogen atmosphere
- Script-based control – any sequence can be programmed
- Upscaling to commercial machines possible

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### Our Service

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- Machine construction customized to your needs
- Possible changes: Different laser sources, powder handling, heating, build envelope size
- Alternatively, tests can be carried out on the Test Rig at Fraunhofer UMSICHT

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### Your Benefits

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In the early stages of material development initial sintering tests of new materials are possible using a minimum amount of powder. The results can be transferred to production machines thanks to the use of identical process conditions.

This ensures a time and cost saving and efficient material development.

Thanks to the modular design of the Test Rig, new and alternative components can be easily integrated.