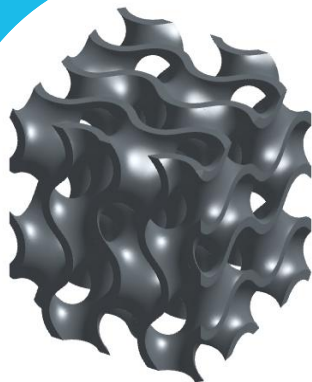




Universität Stuttgart
Institute of Applied Mechanics
Soft Robot Mechanics Group
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Development of Magneto-Elastomeric Resins for Stereolithography Based 3D Printing



Master's thesis

Stereolithography (SLA) is a form of additive manufacturing used to create polymeric parts with complex geometries. Through addition of magnetic microparticles into the printing resins, soft robots capable of magnetic actuation with complex geometries can be realized.

The goal of this Master thesis is to develop a photocurable magnetic resin to be used in an SLA printer for the manufacture of magnetic soft robots with complex geometries.

Tasks:

- Literature review
- Development of magneto-elastomeric polymer resin
- Optical characterization of resin suspensions
- Rheological characterization of resin
- Interpretation and discussion of results

Requirements:.

- Basic knowledge of polymer structure and chemistry
- Strong understanding of colloidal suspensions
- Knowledge in optical properties of materials

Languages:

- English

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