

Conductive nano-material influence on photopolymer properties

✓ Bachelor- / Studien- / Masterarbeit

To improve the properties of 3D printable piezoelectric composites the dielectric properties of photopolymer must be increased. One method to do so is to add conductive nanomaterials into the suspensions. Conductive nanomaterials influence printability, mechanical, electrical and thermal properties. The exact influence must be investigated and understood.

As a first step, Multi Wall Carbon Nanotubes and Graphene nanoplatelets will be used as nanomaterials to fill photopolymer. The resulting viscosity of the suspensions, cure depth, microstructure, mechanical properties and dielectric properties will be measured.

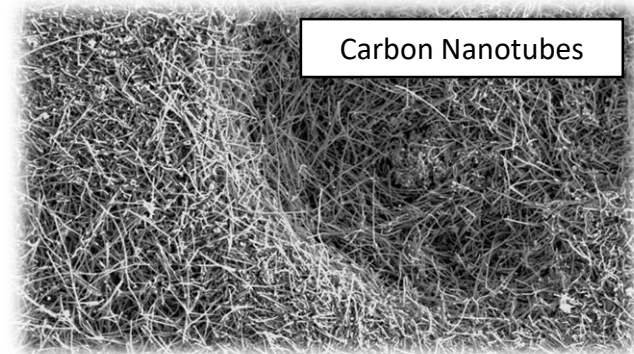
From the results the suitability of nanomaterials will be defined.

Tasks:

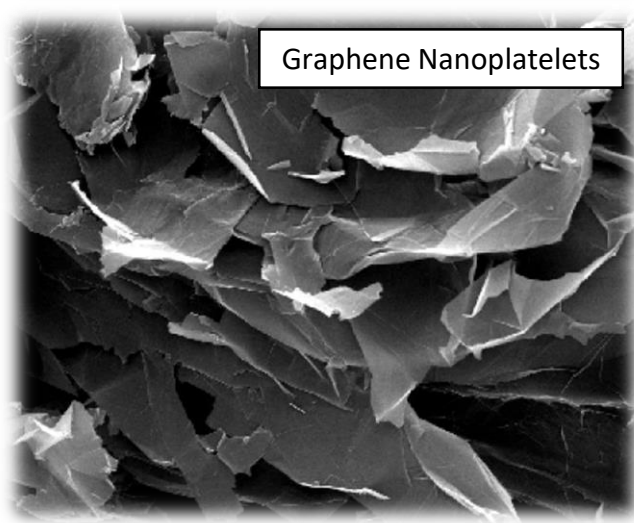
- Prepare suspensions and 3D print composite specimens
- Measure the viscosity, microstructure, cure depth and dielectric properties of printed specimens

Additional information:

- Part of experimental work will take place at DLR Braunschweig
- Multiple works on same topic possible (e.g. Studienarbeit + Masterarbeit)



Carbon Nanotubes



Graphene Nanoplatelets

Contact: Rytis Mitkus
r.mitkus@tu-braunschweig.de
Tel.: 391-2688, Room 101