

عنوان مقاله:

Morphology and Rheological Properties of Copper-Polypropylene Composite as a Candidate for Fusion Deposition Modeling (FDM) Filament

محل انتشار:

دوازدهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1395)

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خلاصه مقاله:

Fused deposition modeling (FDM) is almost a new rapid production method using polymers as filament. Highly filled polymers can also be used as FDM filaments. Copper and polypropylene-based binder wase melt mixed in an internal mixer. The conditions of melt mixing were optimized for composites. The state of dispersion of copper powder in polypropylene based binder was examined by SEM and optical microscope. A good adhesion between metallic powder and binder was observed. The rheological properties of the 50 and 60vol% showed that lower rheological properties (almost one third) in case of the 60vol% composite. It was attributed to better filling and stress transfer during mixing in internal mixer chamber. The 60vol% composite was proposed as good candidate as filament for FDM of metallic parts

کلمات کلیدی:

3D Printing, FDM, rheology, SEM, optical microscopy

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