

Correlation between heat treatment and electrorheological performance of SiO₂/TiO₂ hollow nanoparticles

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Electrorheological (ER) fluids have received many attention due to their numerous advantages. Especially, SiO₂/TiO₂ hollow nanoparticles (HNPs) have been adopted as materials for ER fluids due to their hollow structure and high surface area. In this study, HNPs are used to find out the association between the heat treatment and ER performance. The phase of HNPs changed from amorphous to anatase as the heat-treated temperature increased, which causes the decrease of surface area and increase of grain size. As a result of these changes, ER performance decreases as the heat temperature increases. This study will give another approach to ER fluids that can be improved.

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