

Fabrication of high heat dissipation alumina-epoxy composites using capillary attraction between the filler particles

김수연, 양지원, 이주형[†]

명지대학교

(ljbro@mju.ac.kr[†])

Ceramic-polymer composites are considered promising candidates for effective management of released heat from various electrical and electronic devices owing to their high thermal conduction and good electrical insulation. To produce the composite with a high thermal conductivity, a high loading of thermally conductive ceramic fillers is typically required at concentrations above the percolation threshold. However, this often reduces the rheological processability of composite and increases the weight of final product. In this study, we demonstrate the alumina-epoxy composite with a relatively low filler loading (30 vol.%) yet a high thermal conductivity manufactured by using capillary attraction between the filler particles.