Liquid Metal-based Composite Design and Applications

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Abstract

Liquid metal (LM)-based composites offer new design strategies for soft electronics, enabling robust electrical interconnects and energy harvesting systems. This presentation highlights recent advances in LM composites, focusing on the rapid 3D assembly of LM microdroplets to create soft vias and interconnects. Leveraging the UV resin curing behavior anomaly, the developed technique facilitates the concurrent fabrication of soft vias without through-hole fabrication. Additionally, a zwitterionic polymer-based thermoelectric generator demonstrates efficient energy conversion by leveraging ionic charge transport and LM electrodes. Combining self-healing properties and controlled ion mobility provides a new framework for stable, flexible power sources. Extrapolating these concepts, LM-based materials have the potential to enhance energy storage functionality by improving ion conduction and interconnect reliability, presenting new opportunities for energy storage applications.

참 고 문 헌

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