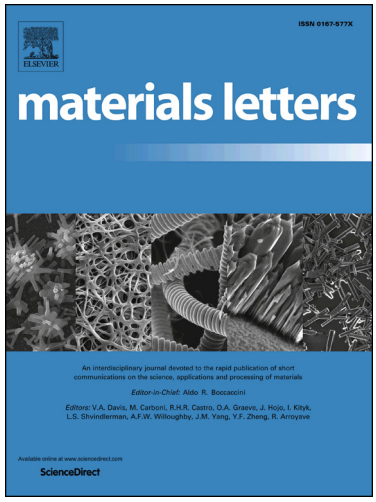

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Abstract

In this work, an advanced stretchable characteristic of liquid metal (LM) was revealed for fabricating a highly stretchable and extremely stable conductor. Thanks to the deformable advantage of LM droplets continuously connected in polyurethane (PU) matrix, the stretchable conductor with outstanding conductivity (165.5 S/cm) exhibits extreme stability that the resistance change is less than 300% even strain up to 500%. The stretchable conductor with advanced stretchable characteristic obviously surpasses the common conductors that utilize brittle conductive nanomaterials (i.e. graphene (GE), carbon nanotubes (CNT), silver (Ag) and copper (Cu)) and such advanced characteristic of LM makes it attractive in various stretchable electronic devices.

Keywords： Liquid metal; Stretchable conductor; Electrical properties; Microstructure

1. Introduction

Stretchable conductor that simultaneously possess excellent stretchability and high