

Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Capillary Flow of Gallium Based Liquid Metal with Surface Oxide¹ SANGYUN JUNG, SEJIN CHOI, JONGWON LEE, WONJUNG KIM, Department of Mechanical Engineering, Sogang University — Gallium-based liquid metals are attracting growing interest thanks to their potential applications in flexible electronic devices. The liquid metals are non-toxic and highly electrically conductive while the state of liquid at a room temperature allows exclusively large deformations. The liquid metals typically form a surface oxide layer in the atmosphere leading to solid-like behavior, and their flow often exhibits unpredictable and complex characteristics. To better understand the effects of the oxide layer of gallium-based liquid metals on flow, we experimentally investigate liquid metal flow in a capillary tube and analyze the forces acting on the interface with the oxide skin.

¹This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIP) (Grant No. 2017R1E1A1A01073599)

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Date submitted: 30 Jul 2019

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