

Abstract Submitted  
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**Janus Gel Fabrication Using Liquid Drop Coalescence and Limited Mixing in the Hele-Shaw Geometry**<sup>1</sup> BRITTANY GONZALEZ, Georgia Institute of Technology, ALEXIS MORAN, University of Florida, DONGHEE LEE, SANGJIN RYU, University of Nebraska-Lincoln — Hydrogel substrates of tunable stiffness have been actively utilized for in vitro cell mechanobiology study. Here we present a new method to fabricate Janus polyacrylamide gel based on limited mixing between liquid drops coalescing in the Hele-Shaw geometry. Two pre-polymer drops with different concentrations were sandwiched and squeezed between two parallel glass surfaces. Once the drops coalesced in the decreased gap between the surfaces, gelation was initiated by UV light exposure with various time delays. AFM nano-indentation was utilized to map the Young's modulus of obtained gels. Fabricated Janus gels had two regions of different Young's moduli interfaced by the stiffness gradient zone, and the width of the gradient zone increased with the delay time.

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