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The influence of negative current collector size on a liquid metal positive electrode IBRAHIM MOHAMMAD, RAKAN ASHOUR, DOUGLAS KELLEY, University of Rochester — Fluid mixing in the positive electrode of a liquid metal battery (LMB) governs some performance-related factors such as the rate of charge and discharge of the battery. The negative current collector (NCC) of a LMB is always smaller than the positive current collector, implying that current is convergent at the NCC. Also, different NCC sizes introduce different thermal, electromagnetic, and flow boundary conditions. In this talk, I will show how our lab studies the influence of NCC diameter on the flow in a liquid metal positive electrode driven by electrical current. I will present measurements of the flow velocity taken via Ultrasonic Doppler Velocimetry (UDV) over a range of different currents, at different NCC diameters.

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