

Abstract Submitted  
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**Encapsulating Ellipsoids in Drops**<sup>1</sup> MICHAEL NORTON, TERESA BRUGAROLAS, JONATHAN CHOU, HAIM BAU, DAEYEON LEE, University of Pennsylvania — Large aspect ratio particles were produced by embedding spherical polystyrene particles within a polymer film and subsequently heating and stretching the film. Particles were released by dissolving the film. Using a flow-focusing device, the elongated particles were partially encapsulated within droplets of fluid A, such as water, surrounded by an immiscible fluid B, such as oil. Drop volumes were controlled by adjusting the flow rates of fluids A and B. The contact angle was adjusted indirectly by varying the amount of surfactant adsorbed to the particle surface. The encapsulation process was visualized with a high-speed video camera. We observed cases ranging from partial to complete encapsulation and examined experimentally and theoretically the shape of the interface between fluid A and fluid B as a function of the drop volume. The numerically predicted position of the pinning line and the shape of the drop were compared to experimentally produced conformations and agreed favorably.

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