Abstract Submitted
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3D Printed Emulsion and Janus Particle Microfluidic Devices[1]

DANIEL ROSEN, KATHRYN SHIRK, None — Microfluidic devices have the ability to manipulate volumes of fluid in the range of microliters to picoliters. Microfluidic devices have high importance in the field of bioanalysis; samples can be quickly and easily tested using complex microfluidic devices. It has been shown that inexpensive microfluidic devices can be produced quickly using a 3D printer PDMS and shrinking material. The ability to fabricate a three dimensional particle focusing device has been shown, and this will be continued by the shrinking of a device to allow a colloidal particle solution to be focused. A device allowing for the creation of an emulsion will be fabricated. This will be built upon to allow for the creation of Janus particles, or particles made of two separate materials. This research will create Janus particles with one hydrophilic side and one hydrophobic side. The creation of Janus particles has a wide variety of applications due to its ability to be amphiphilic.

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