Electronic Supplementary Material (ESI) for Lab on a Chip.

Supporting Information

Point-of-care SARS-CoV-2 sensing using lens-free imaging and a deep learning-assisted quantitative agglutination assay

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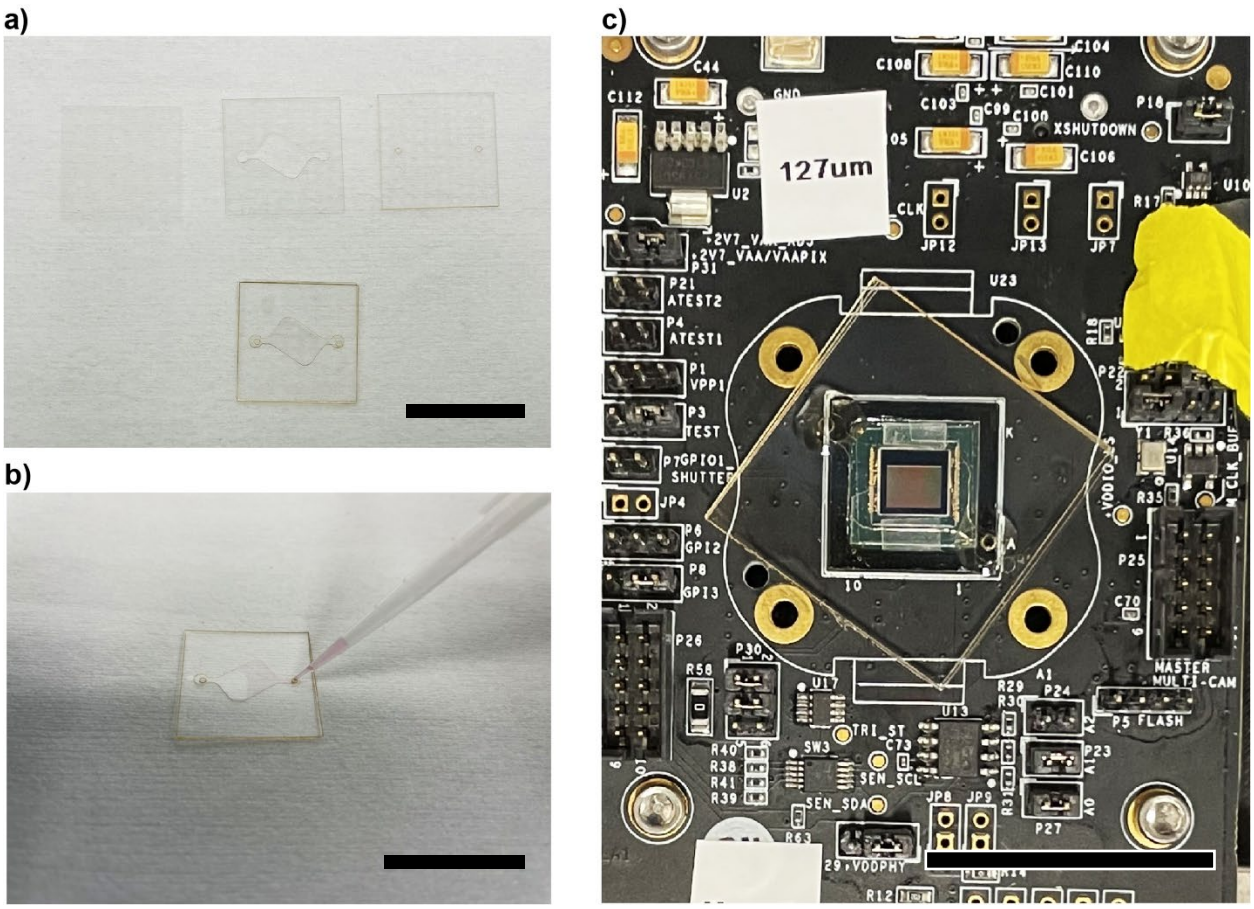
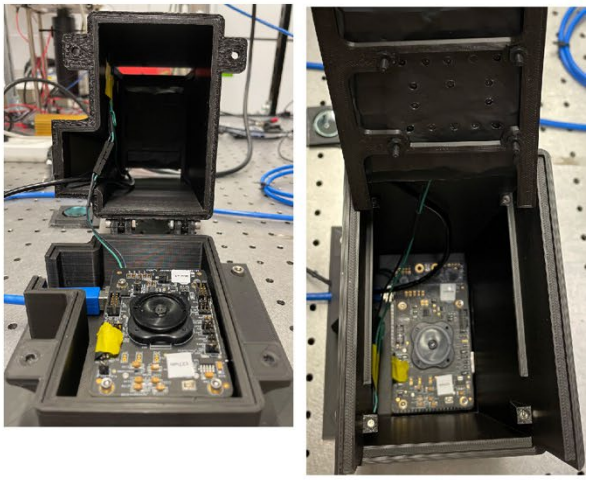


Figure S1: a) Imaging chamber components, from left to right on top: glass coverslip, 125 μm thick polycarbonate (PC) chamber spacer, 250 μm thick PC cover. **b)** Imaging chamber filling with 1:1 DMEM + pseudovirus and PBS + latex bead suspension. **c)** Imaging chip placed on top of image sensor inside the portable LFHM. Scale bars = 25 mm.

a)

b)



c)

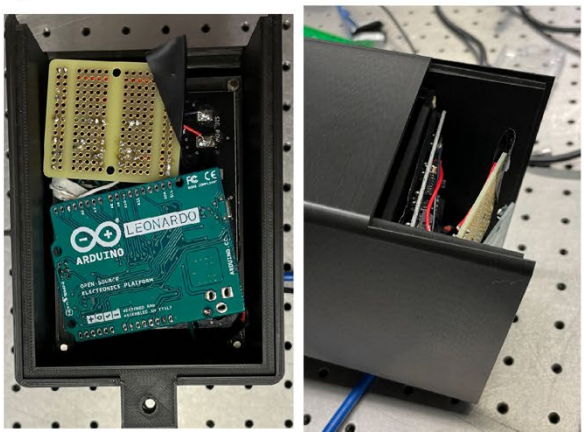


Figure S2: a) External view of portable LFHM housing. Top portion is hinged to facilitate loading of imaging chamber into the biosensor. **b)** Placement of image sensor within the base of the housing. **c)** Custom LED array and Arduino Leonardo microcontroller in top compartment of the housing. The underlying optical table has holes on a one-inch grid.

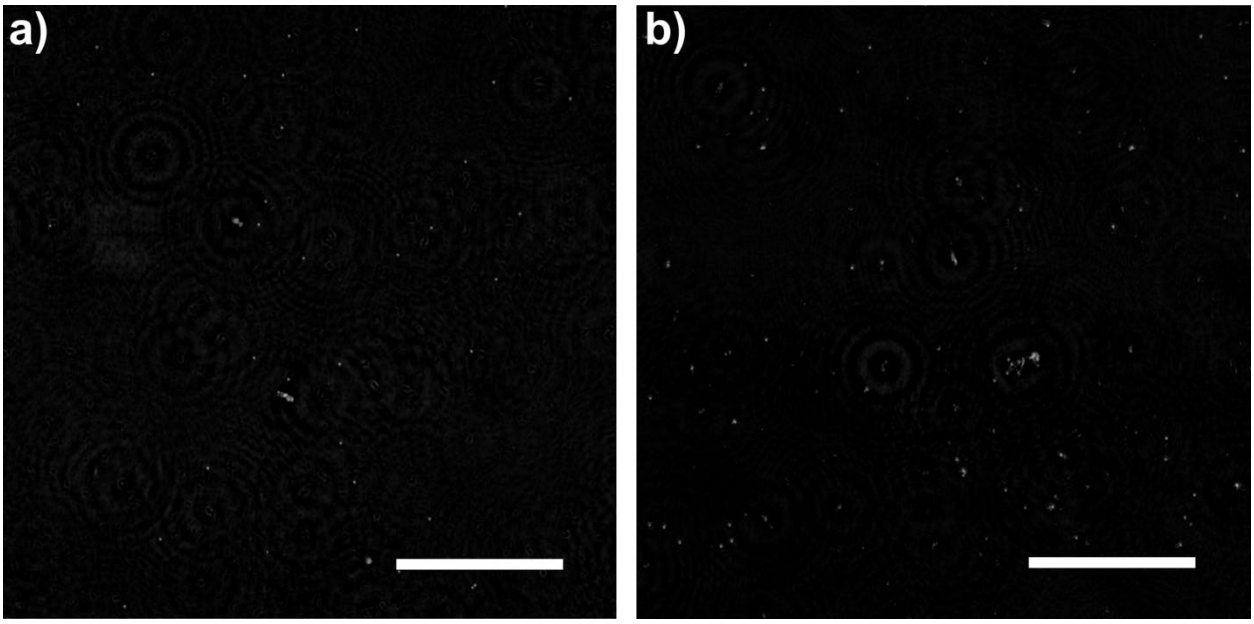


Figure S3): a) Representative image of sample of filtered SARS-CoV-2 pseudovirus with 0.0025% latex beads. Despite filtering, there is still debris present. **b)** Representative image of sample of unfiltered SARS-CoV-2 pseudovirus with 0.005% latex beads. Without filtering, there is more debris and particle irregularity. Scale bars = 150 μm.