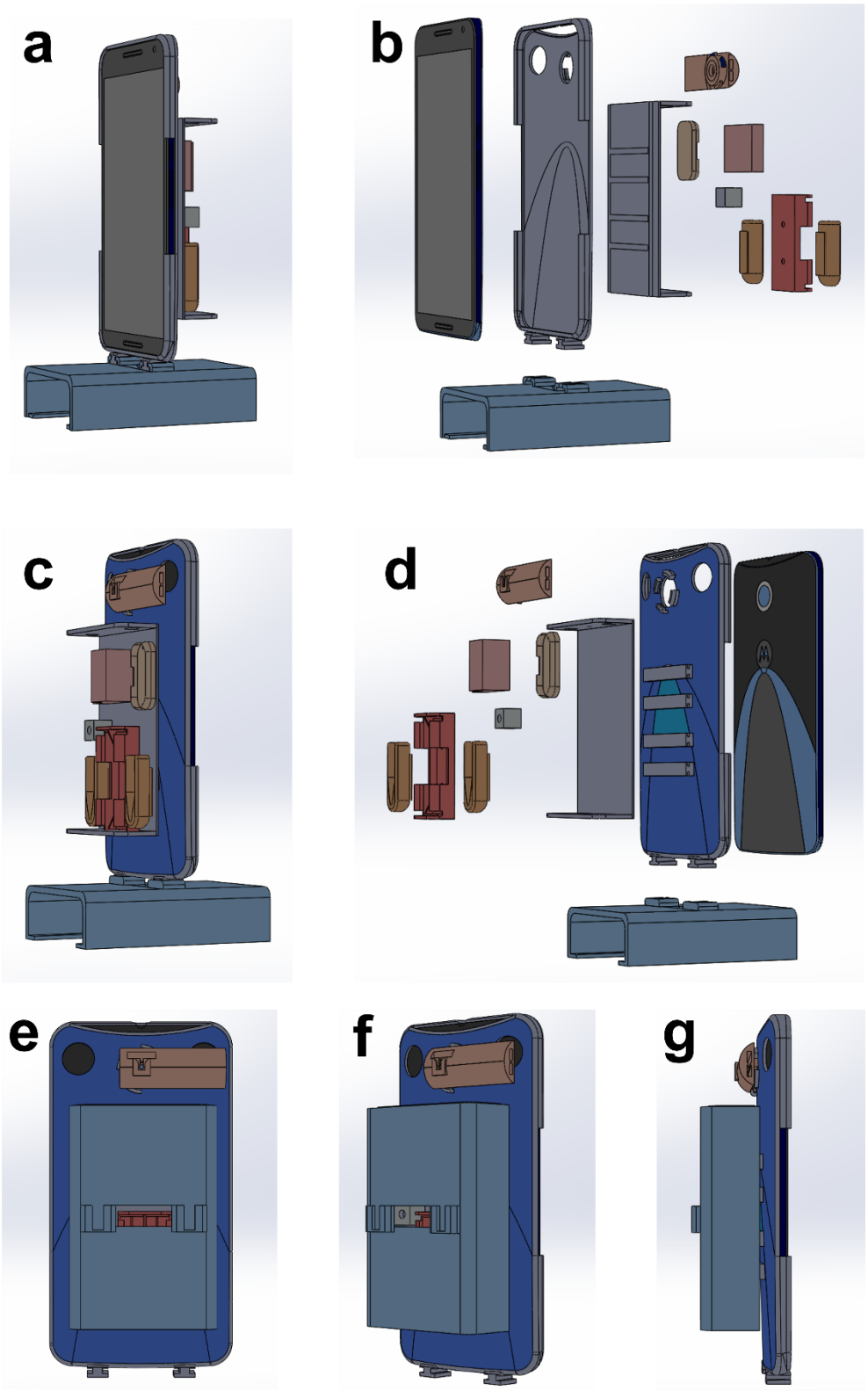
Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Smart-phone attachable, flow-assisted magnetic focusing device

Reza Amin[1], Stephanie Knowlton[2], Bekir Yenilmez[1], Alexander Hart[2], Ashwini Joshi[2], and Savas Tasoglu[1,2,¥]

[1]Department of Mechanical Engineering, University of Connecticut, Storrs, CT 06269.
[2]Department of Biomedical Engineering, University of Connecticut, Storrs, CT 06269.
[¥]Corresponding Author: Savas Tasoglu (savas@engr.uconn.edu)

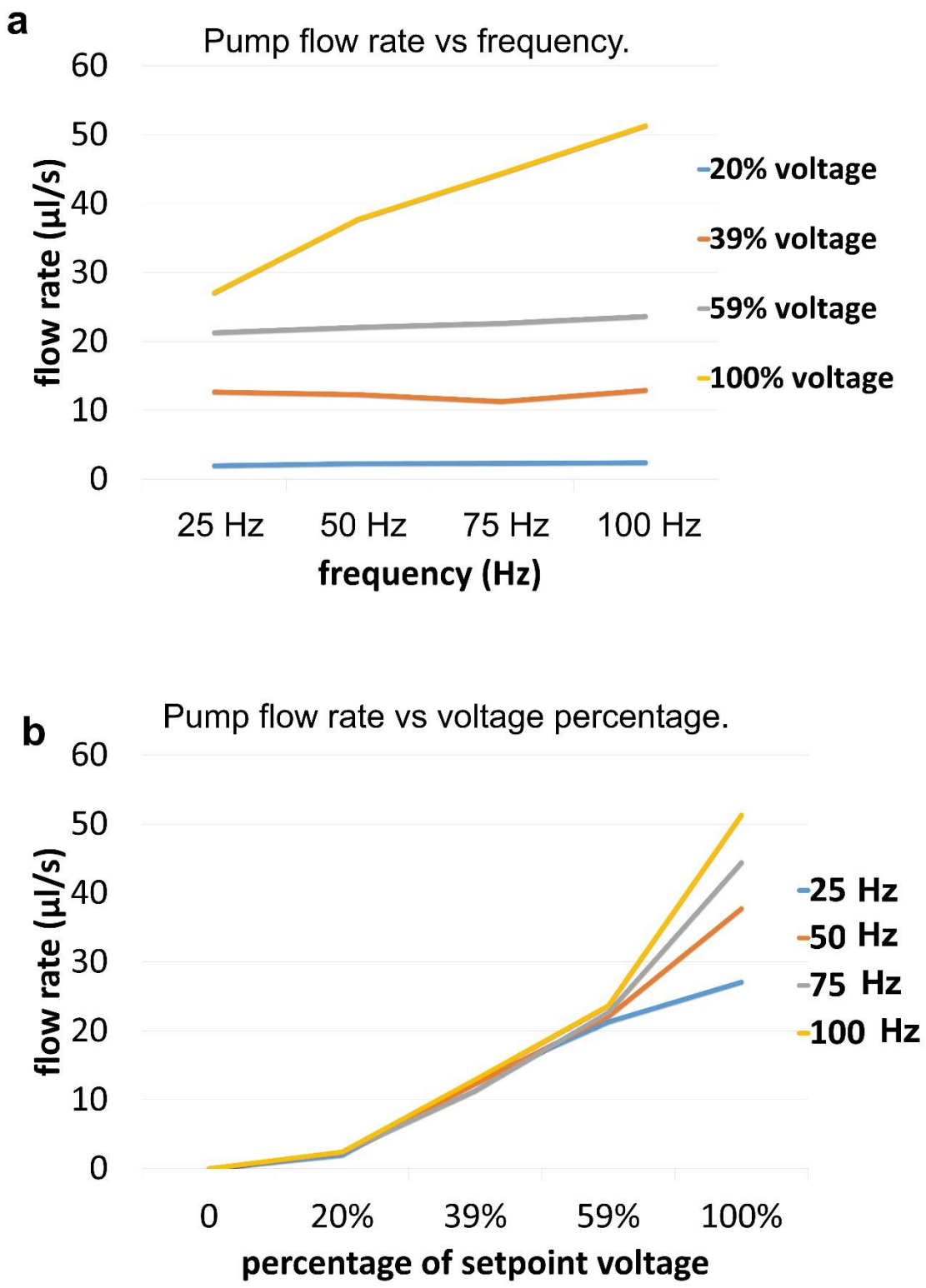


Supplementary Figure 1. 3D CAD design of the setup. (a) Front view of the setup. **(b)** Front exploded view of the setup. **(c)** Back view of the setup. **(d)** Back exploded view of the setup. **(e-g)** Different views of the stand covering the instruments.

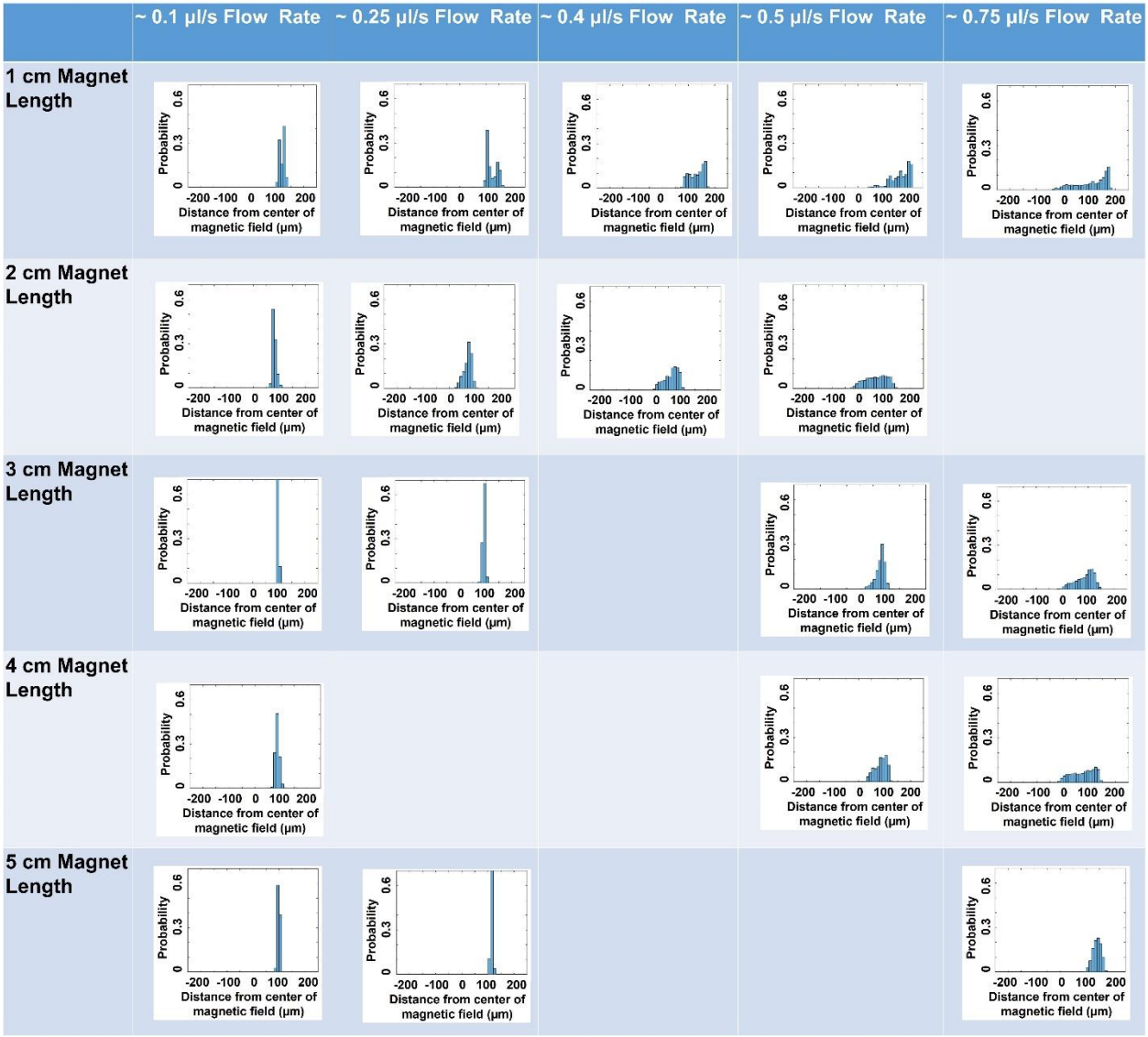
Pump flow rate (µL/s) vs voltage percentage (PWM) and frequency (Hz)				
voltage percentage	25 Hz	50 Hz	75 Hz	100 Hz
0	0	0	0	0
20%	1.95	2.27	2.3	2.4
39%	12.67	12.3	11.2	12.8
59%	21.3	22	22.6	23.6
100%	27.08	37.7	44.4	51.2

Startup capability	
	Not capable
	Poor
	Good

Supplementary Figure 2. Mp6 Micro pump flow rate vs frequency and voltage. The above flow rates has been measured when the pump was placed in the setup and the adjustable orifice was fully open.



Supplementary Figure 3. Characteristics of Mp6 micro pump (based on the data form Supplementary Figure 2). (a) Pump flow rate vs frequency. **(b)** Pump flow rate vs voltage percentage.



Supplementary Figure 4. Micro object focusing for different flow rates and magnet length.