Electronic Supplementary Information

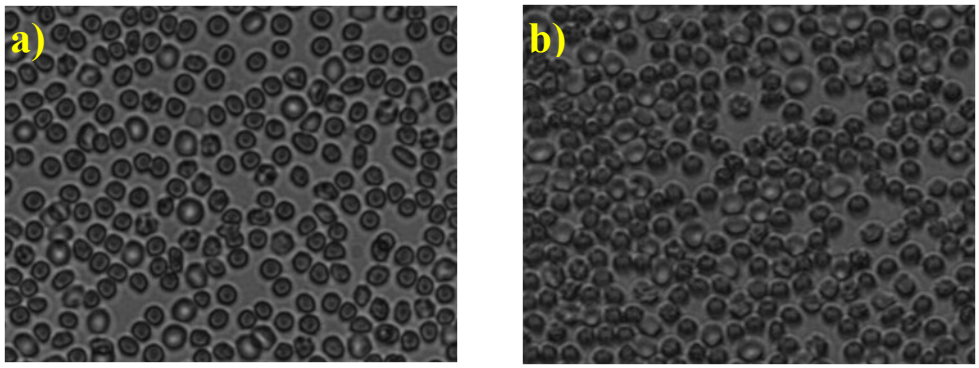

Figure S1: The above figure depicts the microscopic images of **a)** normal RBCs and **b)** glutaraldehyde (GA) treated RBCs. Sample specification: a) (10 µl blood+ 990 µl phosphate buffer saline (PBS) and b) (10 µl blood+980 µl PBS+10 µl GA. There is an alteration in RBC morphology after GA treatment (as the regular shape of RBC is changed). The images were captured through an inverted microscope (OLYMPUS IX71), with 40X objective lens. This particular morphological alteration leads to the rheological alteration (as discussed in Figure S2).

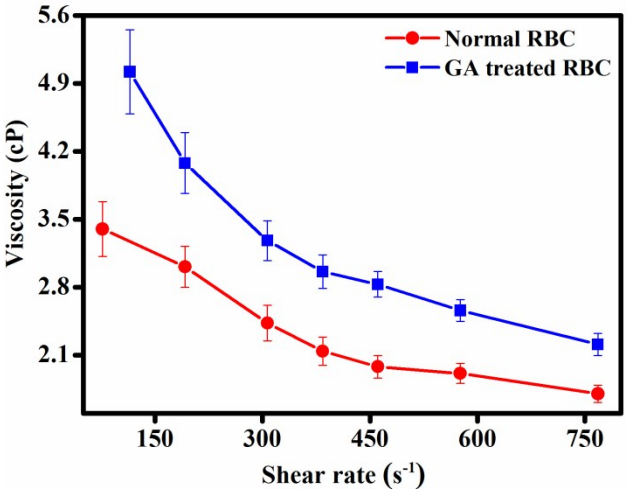

Figure S2. Viscosity vs. shear rate characteristics between normal RBC and glutaraldehyde (GA) treated RBC. Viscosity measurement was done through a viscometer (Brookfield Viscometer DV-II+ Pro). Sample specification (10 µl blood+ 990 µl phosphate buffer saline (PBS) and (10 µl blood+980 µl PBS+10 µl GA).

Table 1:

Hct%	Contact angle (in degrees)	Surface tension coefficient (N/m)
37	64.95	0.05079
41	65.85	0.0521
43	66.42	0.05416
49	70.79	0.05538
53	71.15	0.06589

We have measured the contact angle of blood for different hematocrit values, on PMMA surface using a Rame-Hart (model 500) goniometer and have subsequently determined the value of surface tension coefficient using ImageJ software. Afterwards, the calculated values of surface tension coefficient have been fed in during simulations. The experimental values of contact angles and surface tension coefficients are tabulated in Table 1.