14.02.2024
Report of Experiment of Capillary pressure vs saturation for various initial proportions of blue fluid.

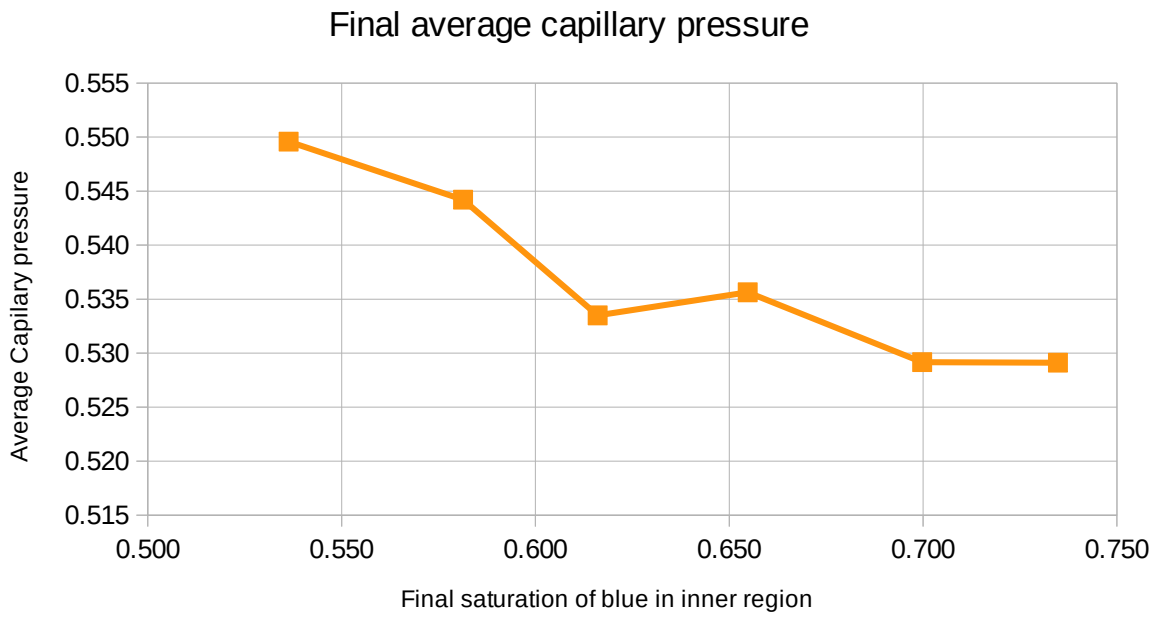
Description:

1. 6 experiments were conducted
2. the initial saturation of the blue fluid was increased by increasing the proportion of blue fluid in the inner region

Conclusions:
The average capillary pressure at the end is calculated by taking the average of P_c in the last 10 points of each experiment.

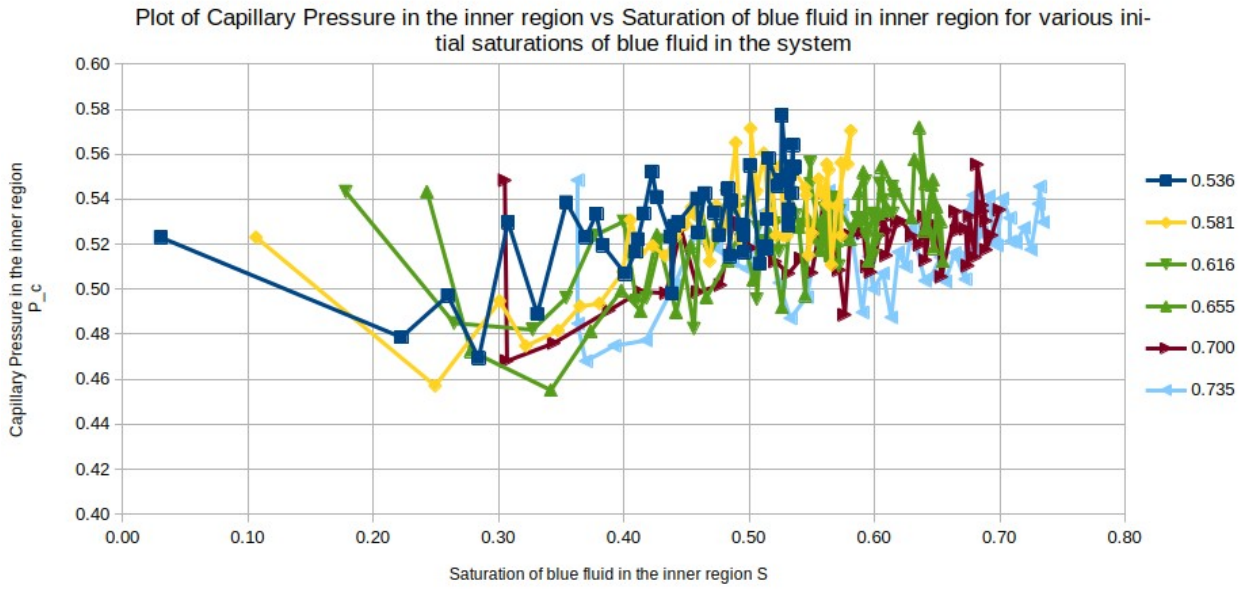
Experiment Number	leave	initial_fill_ proportion	Proportion of blue fluid in the system	Final saturation of blue in the inner region	Average final capillary pressure
1	2	0.2	0.490	0.536	0.550
2	2	0.7	0.530	0.581	0.544
3	3	0.2	0.568	0.616	0.534
4	3	0.7	0.602	0.655	0.536
5	4	0.2	0.634	0.700	0.529
6	4	0.7	0.665	0.735	0.529

The final average capillary pressure shows a decreasing trend with increasing initial saturation.



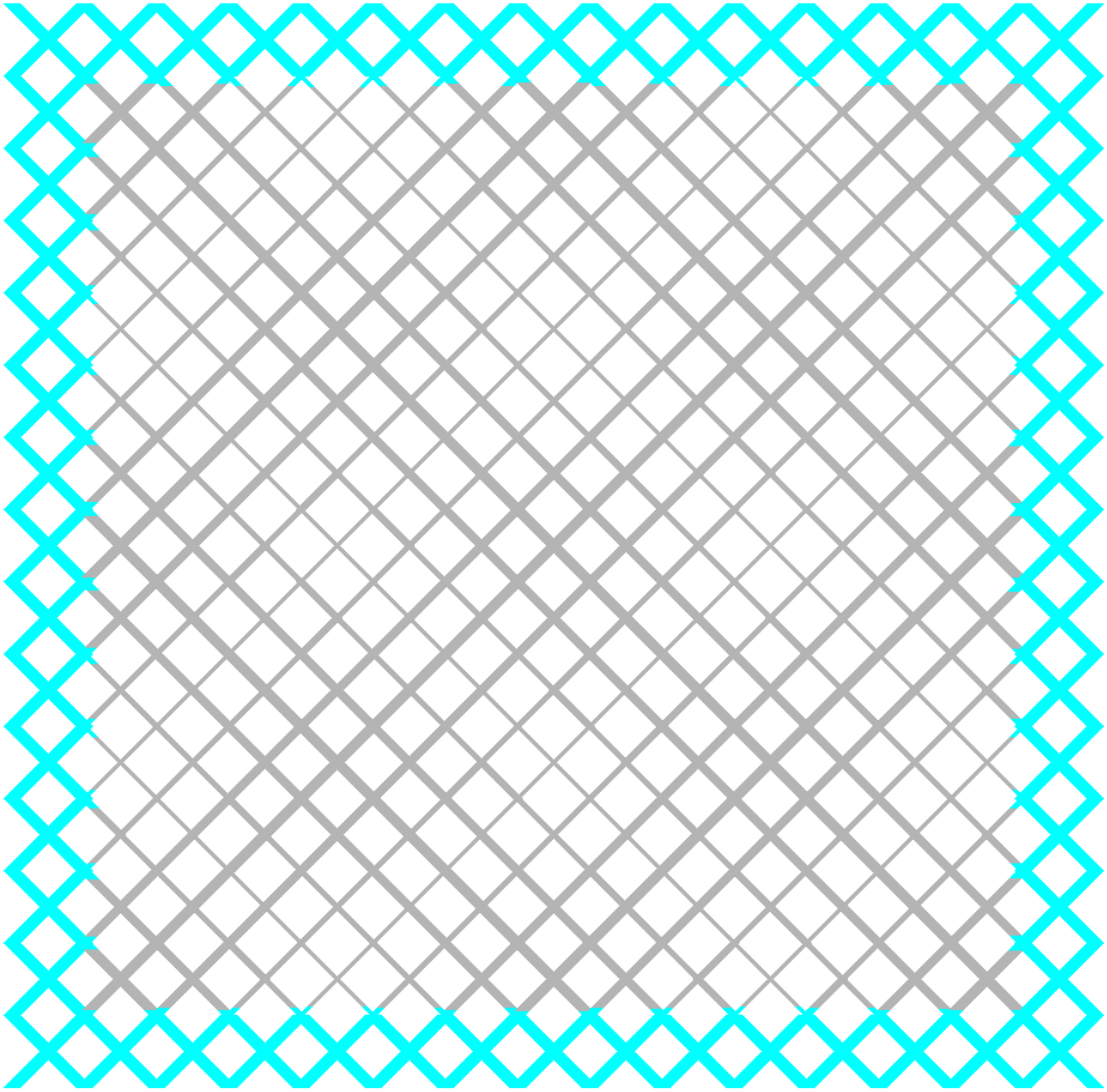
30% increase of final saturation of blue in the inner region gives a 3% decrease in average capillary pressure.

Capillary pressure vs saturation plots for various experiments denoted by the value of final blue saturation



Appendix:
How initial conditions were changed

Experiment 1



Experiment 6