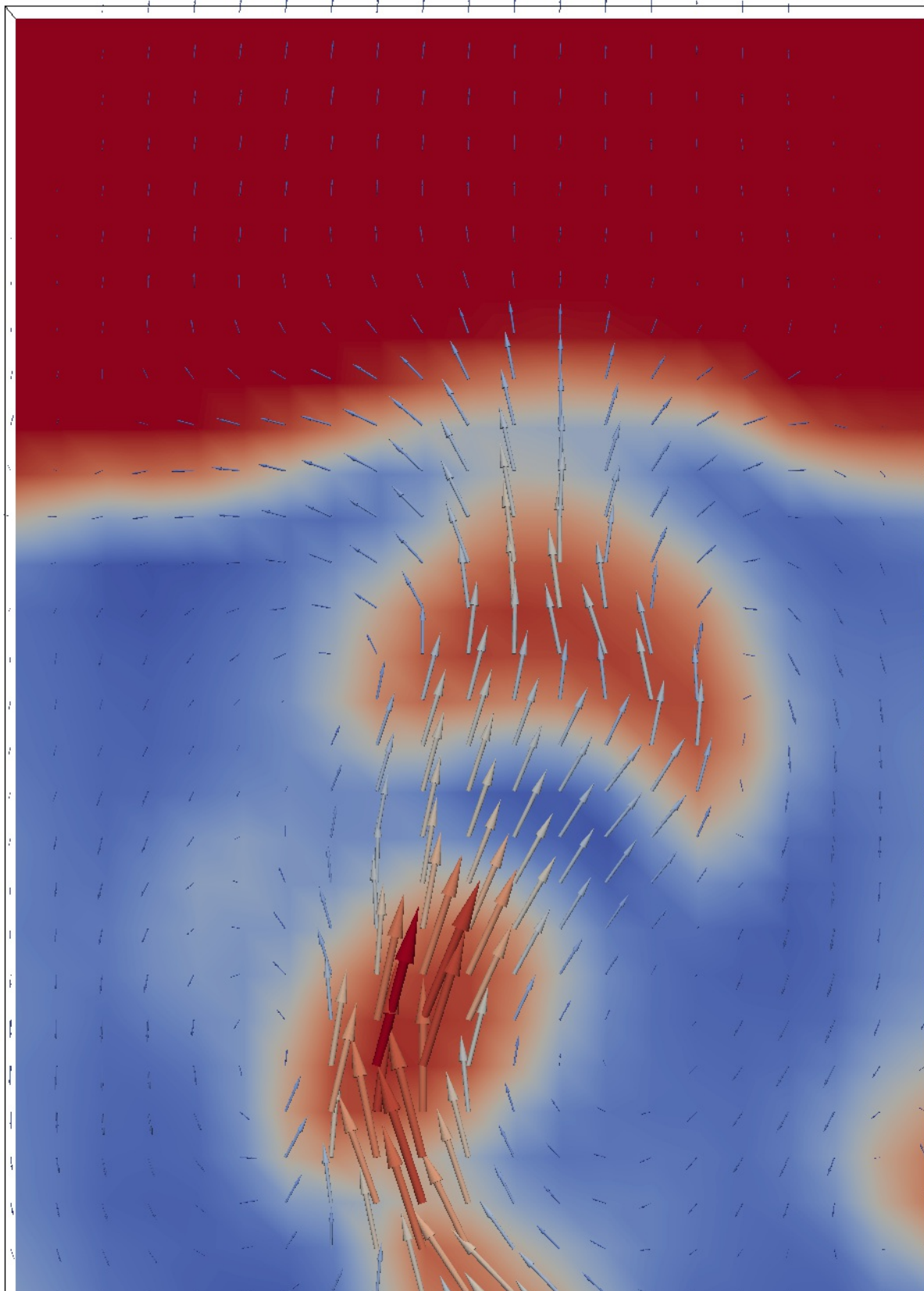
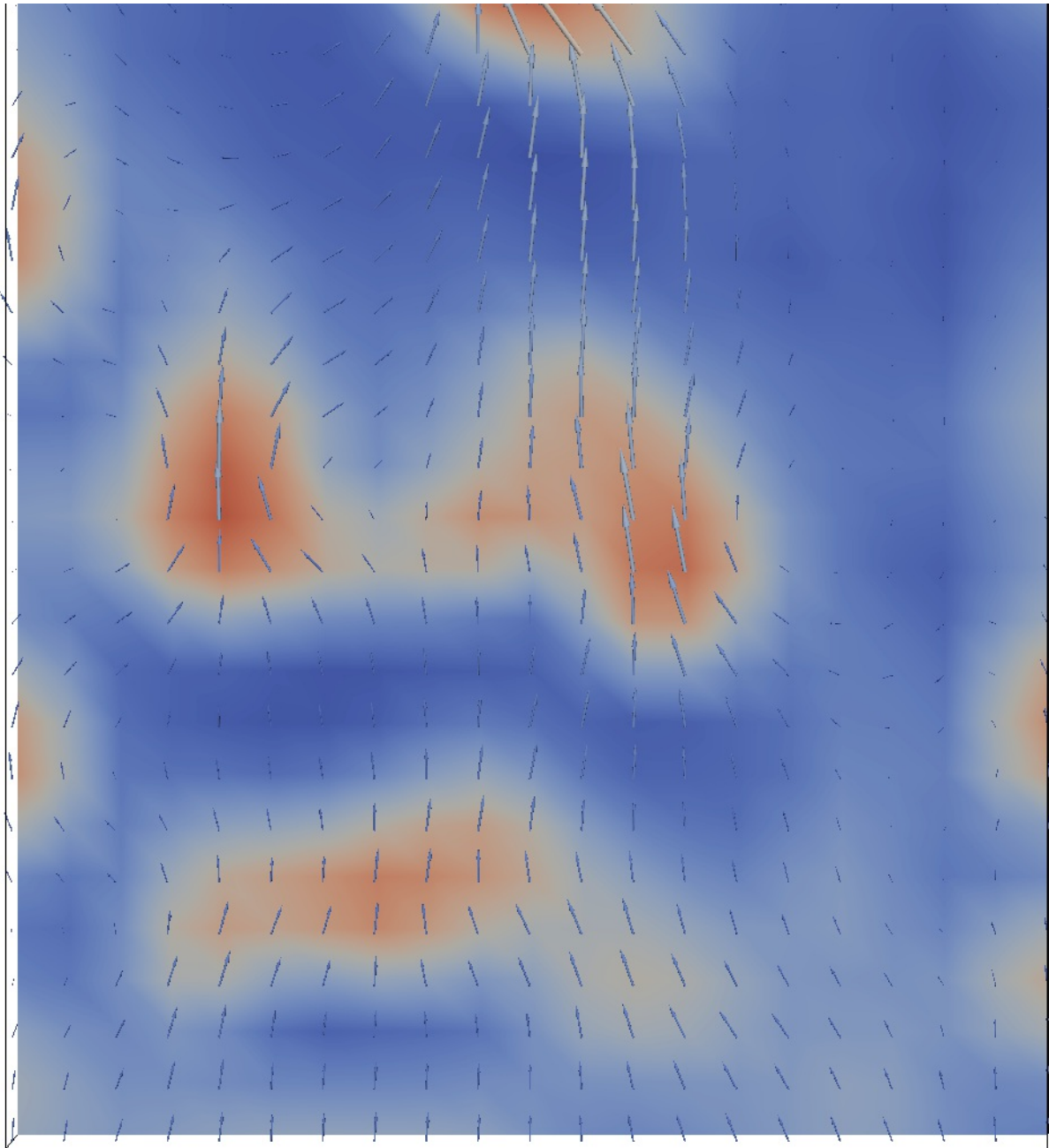
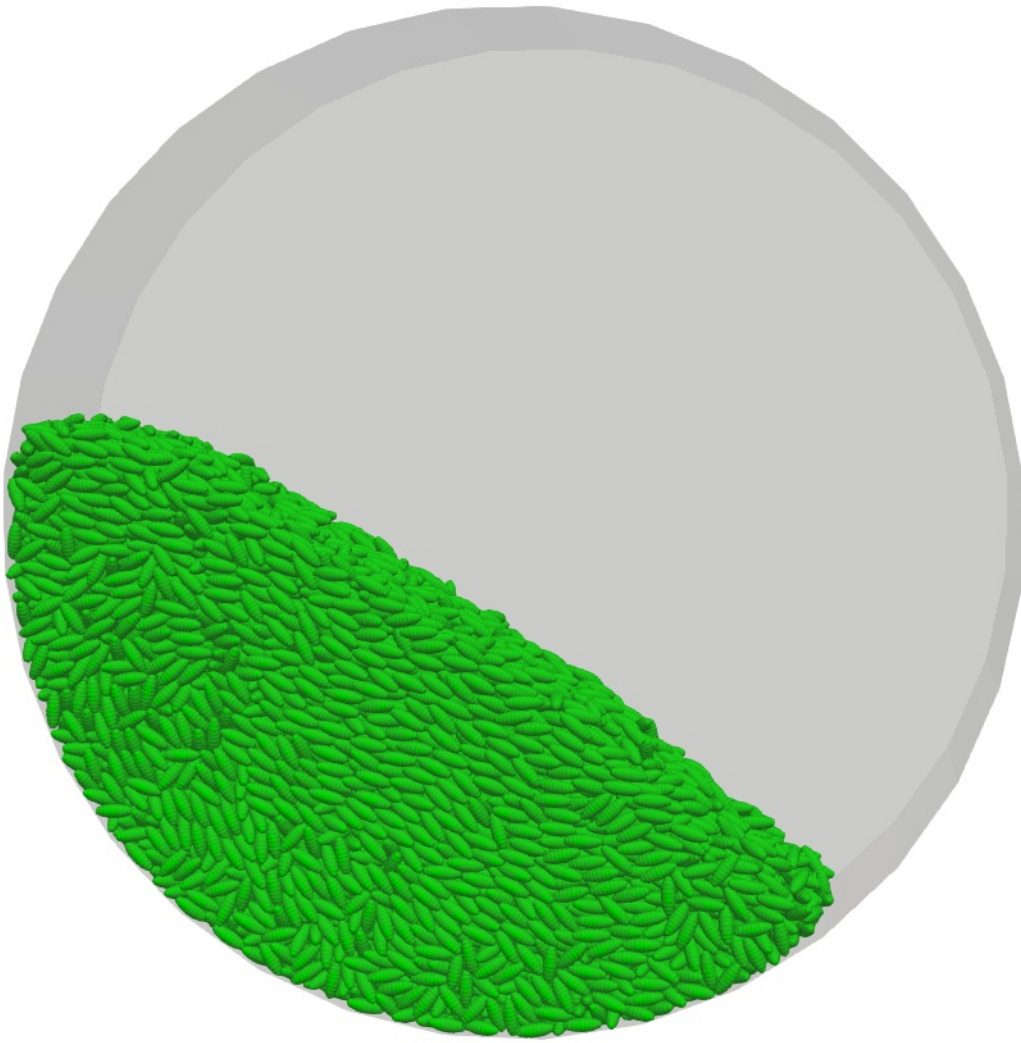


Research

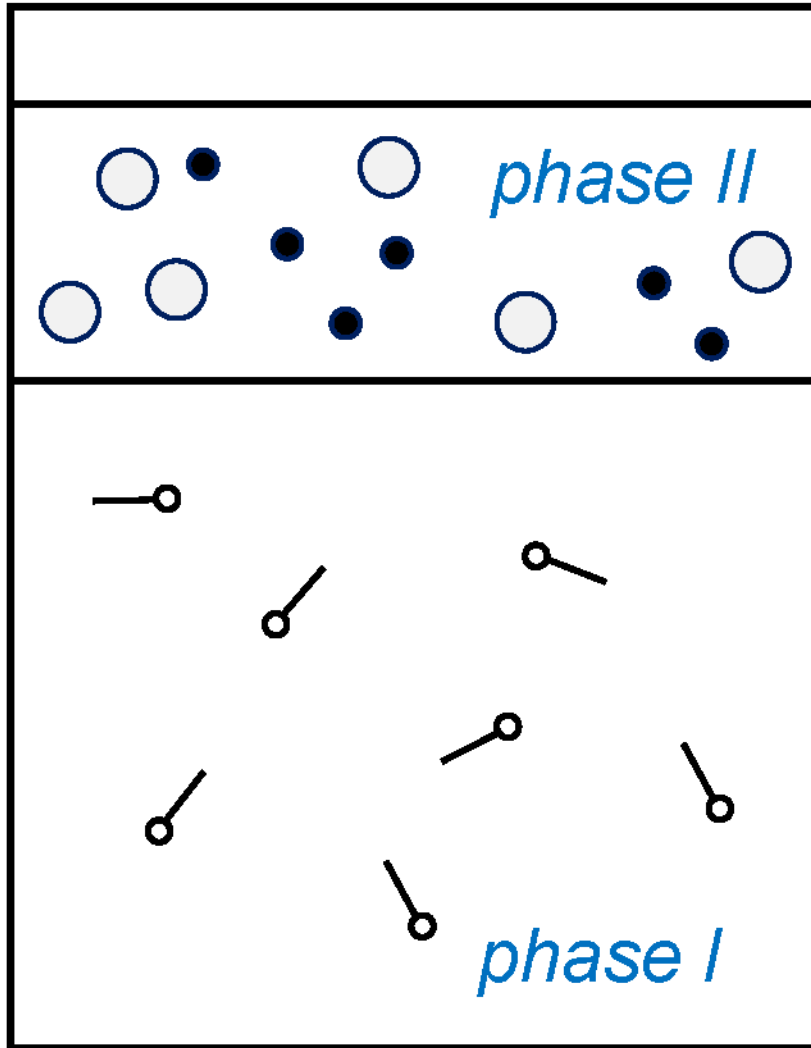
Multiphase Flow







Nano-Particles



*high sl
ultrasonic*

phase I: water
surfactant
initiator

phase II: oil
monomer

$$\begin{aligned}
\vartheta_f = & \left[l_f^{(\text{idw})} u_{i,P} + \left(1 - l_f^{(\text{idw})} \right) u_{i,F} + \overline{\frac{\partial u_i}{\partial x_j}} \Big|_f r_{j,f} \right] \hat{n}_{i,f} \\
& - \hat{d}_f \left\{ \frac{p_F - p_P}{\Delta S_f} - \rho_f \left[\frac{l_f^{(\text{idw})}}{\rho_P} \frac{\partial p}{\partial x_i} \Big|_P + \frac{1 - l_f^{(\text{idw})}}{\rho_F} \frac{\partial p}{\partial x_i} \Big|_F \right] \hat{s}_{i,f} \right\} \\
& + \hat{d}_f \left\{ \left[l_f^{(\text{dw})} S_{i,P} + \left(1 - l_f^{(\text{dw})} \right) S_{i,F} \right] \hat{s}_{i,f} - \rho_f \left[\frac{l_f^{(\text{idw})}}{\rho_P} S_{i,P}^* + \frac{1 - l_f^{(\text{idw})}}{\rho_F} S_{i,F}^* \right] \hat{s}_{i,f} \right\} \\
& + c_f^O \hat{d}_f \left\{ \vartheta_f^O - \left[l_f^{(\text{idw})} u_{i,P}^O + \left(1 - l_f^{(\text{idw})} \right) u_{i,F}^O + \overline{\frac{\partial u_i}{\partial x_j}} \Big|_f^O r_{j,f} \right] \hat{n}_{i,f} \right\} .
\end{aligned}$$

