Supplementary information for
"Driving dynamic colloidal assembly using eccentric self-propelled colloids"

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S1. Simulation Movies for 2D mixture systems

The mov files in the same folder:
Mov_Fig2a.mov
Mov_Fig2b.mov
Mov_Fig2c.mov
Mov_Fig2d.mov
show how 2D mixture systems composed of passive (red) and active particle (green) with different eccentricity evolve with time. Each file corresponds to the same system as indicated in Fig.2a, b, c, d in the main text respectively.

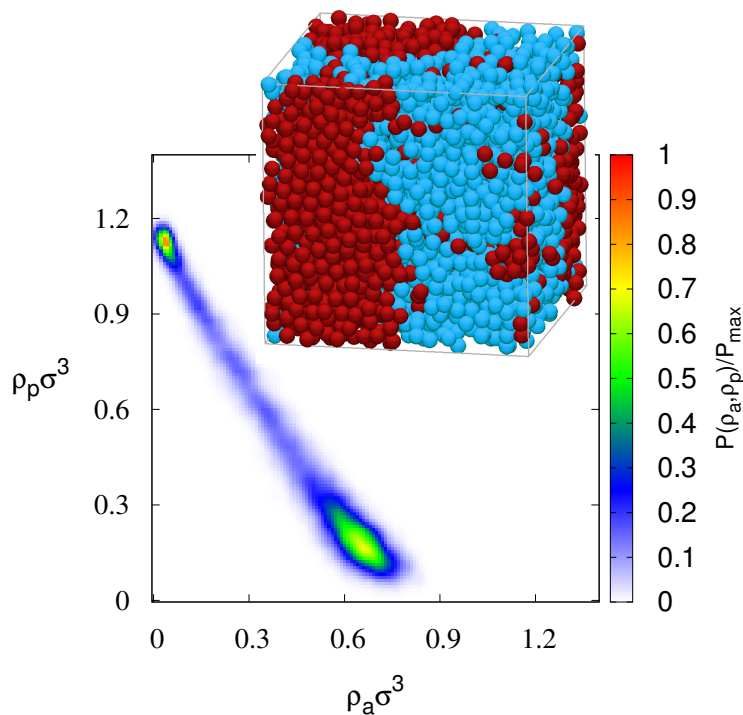### S2. Demixing in 3D binary mixture of passive and eccentric active particles

FIG. S1: Reduced probability distribution of local density $P(\rho_a,\rho_p)/P_{\max}$ with $P_{\max}$ the maximal value of $P(\rho_a,\rho_p)$ in the 3D binary mixture of passive and eccentric active Brownian particles with $\theta=90°$ (R$=2/3\sigma$), $\rho\sigma^3=0.86$ and $x_p=0.5$, $f\sigma/k_BT=200$. The inset shows a typical snapshot of the system, where red and spheres are the passive and eccentric active Brownian particles, respectively.