

Supplementary Material description

1. Supplementary Material 1

The movie shows the simulation of SPP (yellow circle) for $N = 1000$ in 2-dimensional system being propelled towards the AP shown as black circle. The coupling parameter $K_F = 1$ and $Pe = \infty$. The line shown in the movie can be considered as tail and shows the propagation direction.

2. Supplementary Material 2

The movie shows the simulation of SPP (yellow spheres) for $N = 1000$ in 3-dimensional system being propelled towards the AP shown as grey sphere. The coupling parameter $K_F = 1$ and $Pe = \infty$. During the dynamics, the movies are zoomed in to have a clear picture of local dynamics around AP.

3. Supplementary Material 3

The movie shows the simulation of SPP (yellow spheres) for $N = 1000$ in 2-dimensional system being propelled towards the AP shown as grey sphere. The coupling parameter $K_F = 1$ and $Pe = 1$. During the dynamics, the movies are zoomed in to have a clear picture of local dynamics around AP.

4. Supplementary Material 4

Here we are showing, the structure formed by a finite number of SPP at $K_F = 1.0$. The grey sphere is the AP and yellow sphere are SPP.

5. Supplementary Material 5

In this movie the SPP is shown in yellow color circle and AP is black in color. The lines shows the trajectory of the particle. Here $K_F = 0.3$ and $Pe = \infty$.

6. Supplementary Material 6

The movie shows the simulation of SPP (yellow spheres) for $N=100$ in 3-dimensional system being propelled towards the AP shown as grey sphere. The coupling parameter $K_F = 0.2$ and $Pe = \infty$. During the dynamics, the movies are zoomed in to have a clear picture of local dynamics around AP.

7. Supplementary Material 7

The movie shows the simulation of SPP (yellow spheres) for $N = 100$ in 3-dimensional system being propelled towards the AP shown as grey sphere. The coupling parameter $K_F = 0.7$ and $Pe = \infty$. During the dynamics, the movies are zoomed in to have a clear picture of local dynamics around AP.