

Supplementarary online material

## **Tumbling of asymmetric microrods in a microchannel flow**

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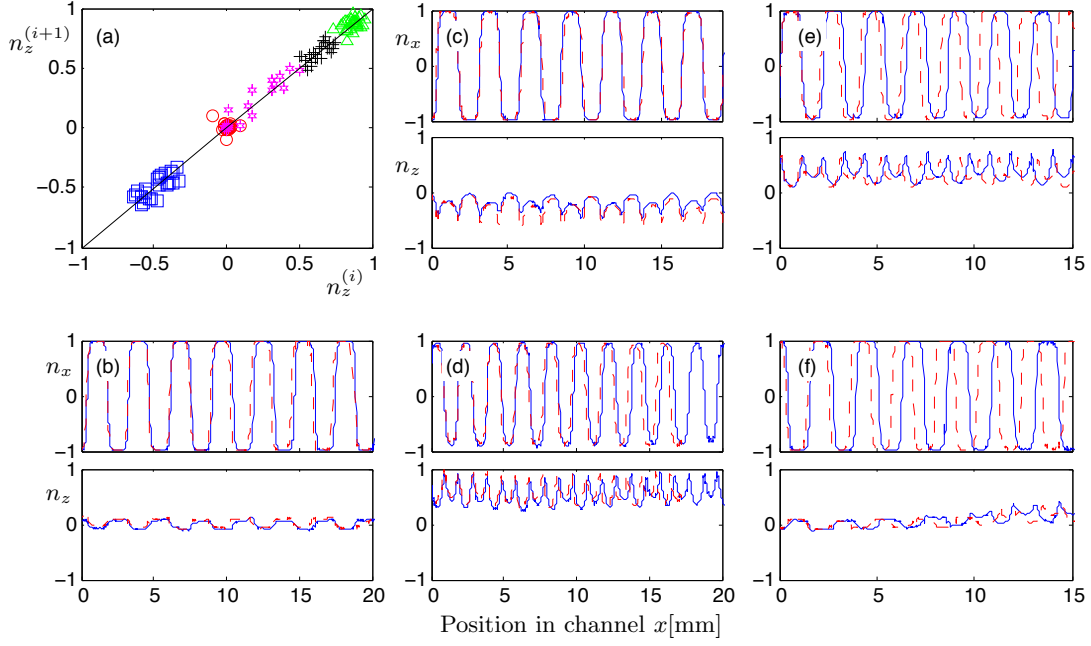


FIG. S1. Orientational dynamics of particle 4. (a) Dynamics of  $n_z$ . Here  $n_z(i)$  denote the values of  $n_z$  at subsequent zero crossings of  $n_x$ ,  $i = 1, 2, 3, \dots$ . The data are taken from panels (b-f). Red  $\circ$  data from panel (b); blue  $\square$  data from (c); green  $\triangle$  data from (d); black  $+$  data from (e); magenta  $\star$  data from (f). Panels (b-f) show orientational dynamics as a function of c.o.m.-position  $x$  in the channel, Eq. (1) in the main text. Data in different panels correspond to different initial orientations. Solid blue and dashed red lines represent forward and backward trajectories, respectively. The flow direction is reversed at  $x = 0$ .

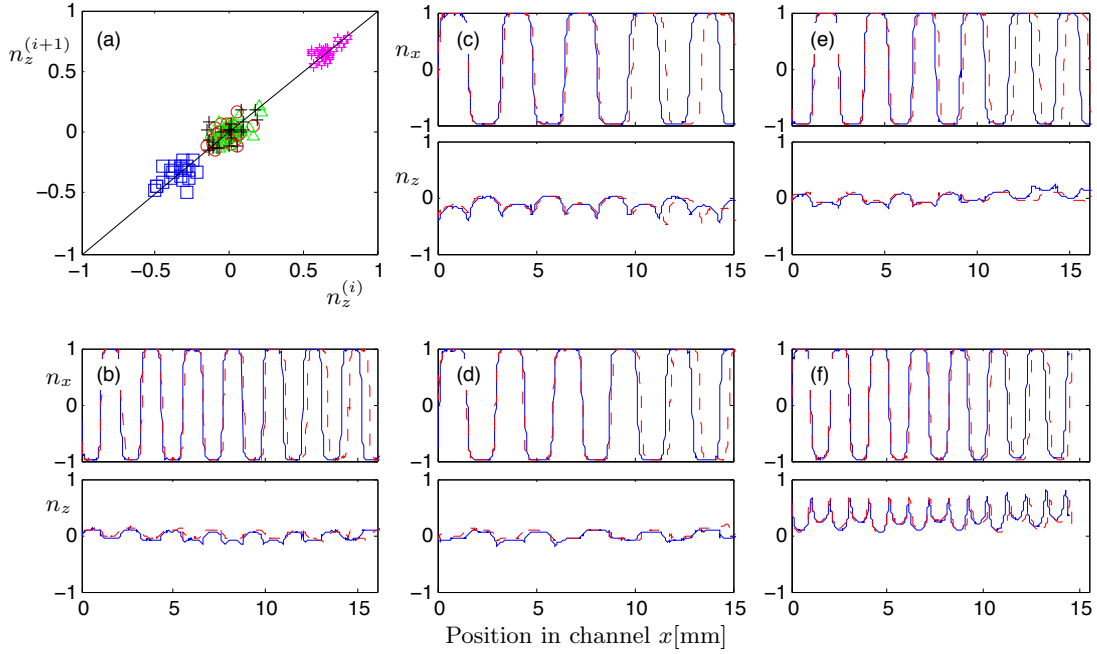


FIG. S2. Orientational dynamics of particle 5.

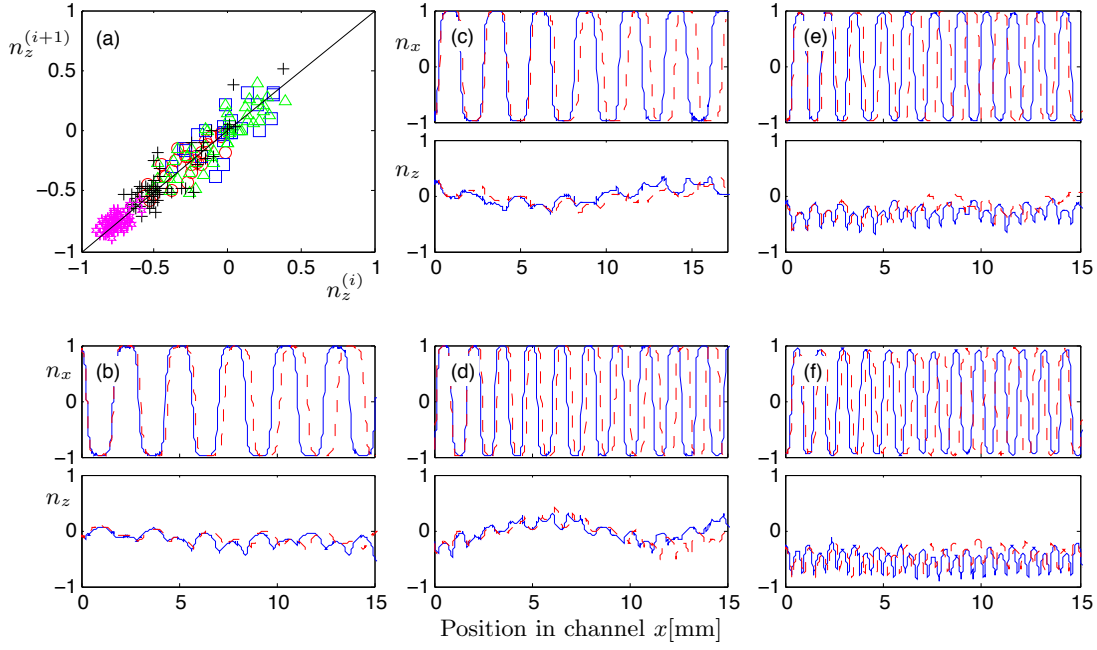


FIG. S3. Orientational dynamics of particle 6.

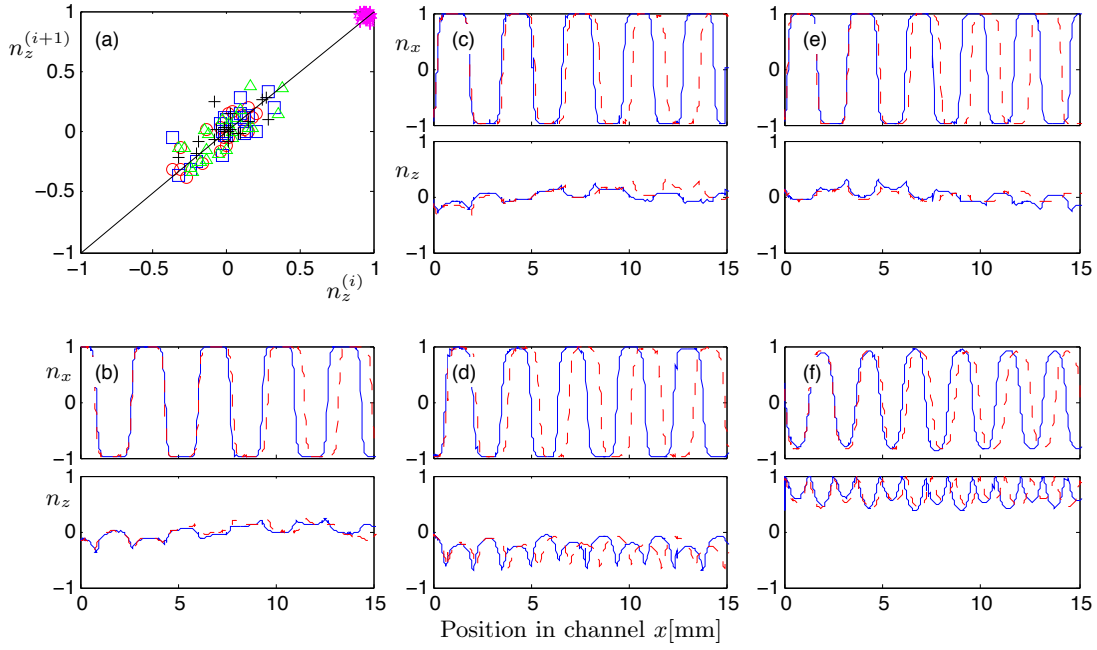


FIG. S4. Orientational dynamics of particle 7.

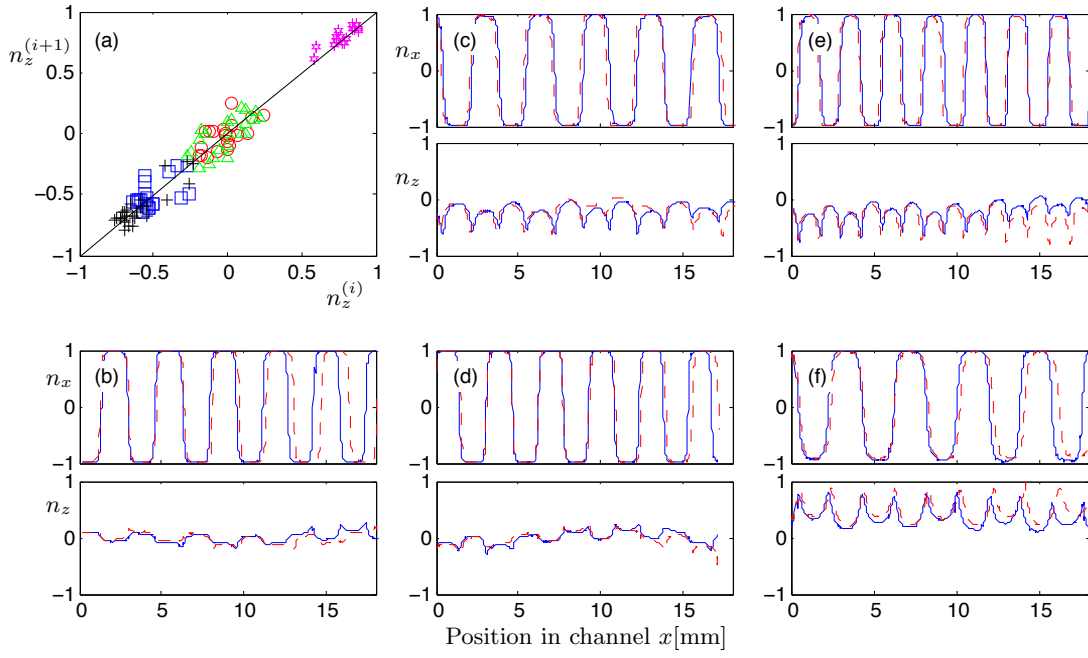


FIG. S5. Orientational dynamics of particle 8.

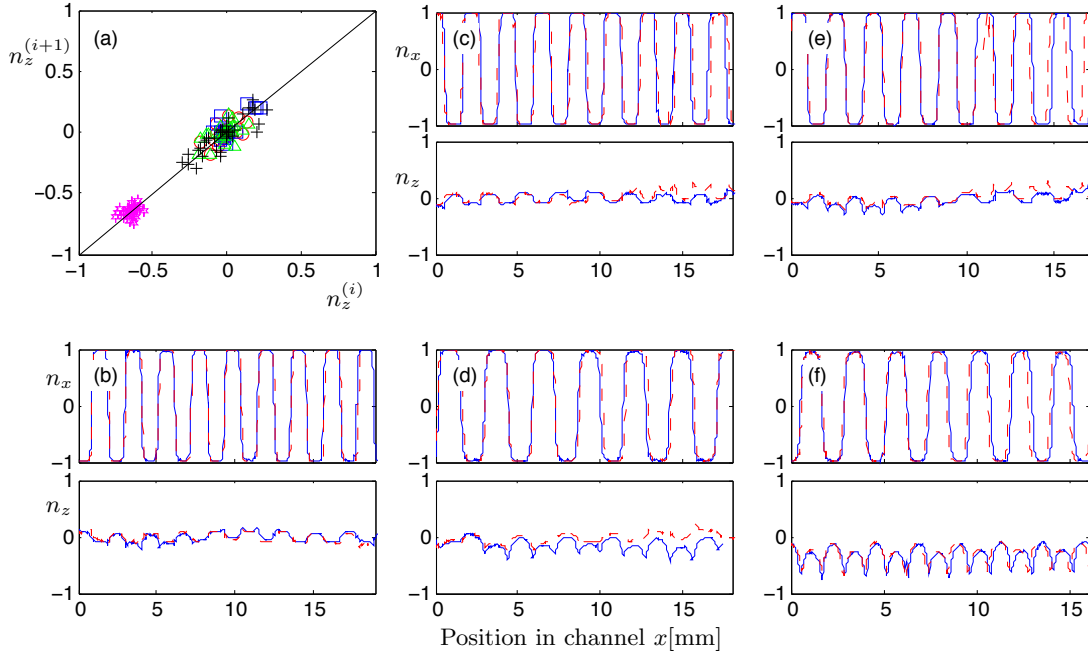


FIG. S6. Orientational dynamics of particle 9.

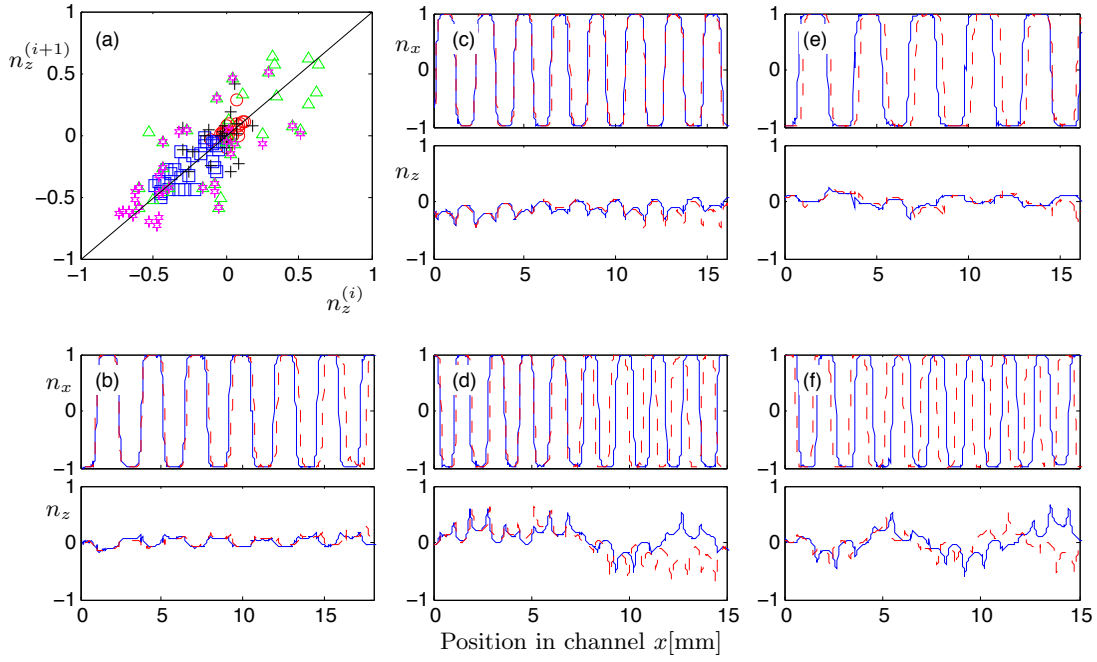


FIG. S7. Orientational dynamics of particle 10.

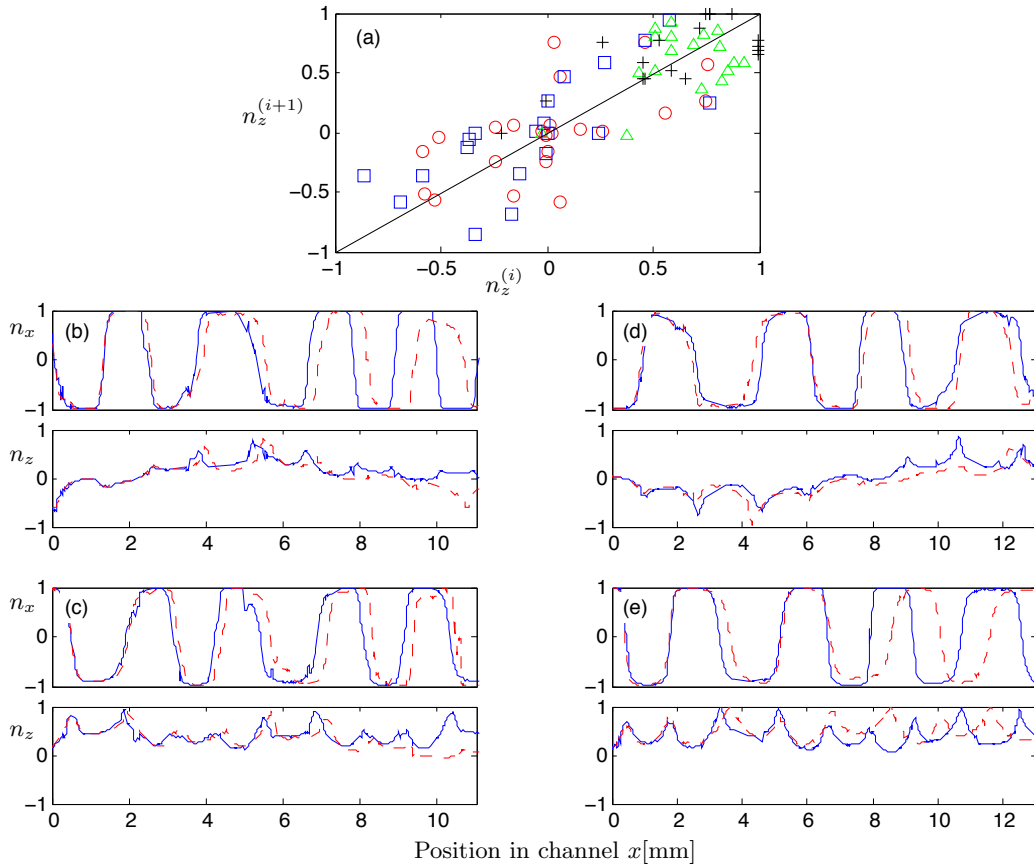


FIG. S8. Orientational dynamics of particle 11.

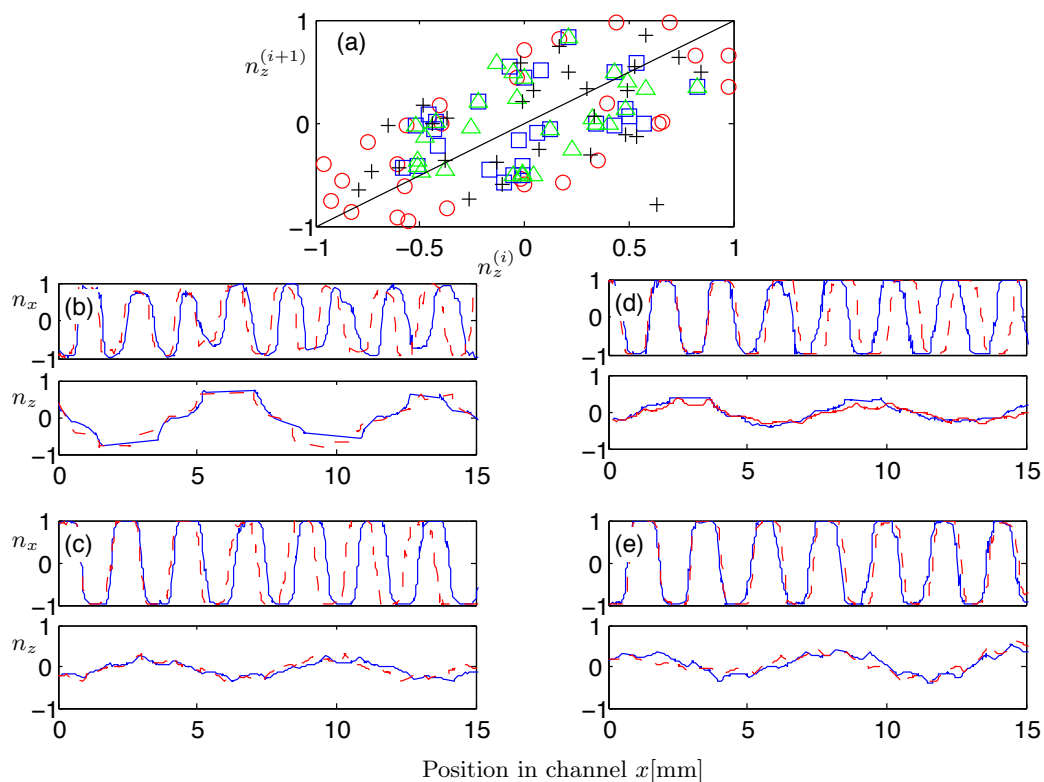


FIG. S9. Orientational dynamics of particle 12.