Electronic Supplementary Material (ESI) for Soft Matter.

Description of the supplementary movies

1. Supplementary_Movie_1.mp4
   Phase separation at high densities.
   Geometry:- PBC
   System size = $56\ell \times 56\ell$
   No. of rods = 3,000
   No. of beads = 69,012
   Rod area fraction $\Phi_r = 0.19$
   Bead area fraction $\Phi_b = 0.56$
   Speed-20X

2. Supplementary_Movie_2.mp4
   Banded structure.
   Geometry:- PBC
   System size = $56\ell \times 56\ell$
   No. of rods = 2,100
   No. of beads = 14,816
   Rod area fraction $\Phi_r = 0.13$
   Bead area fraction $\Phi_b = 0.12$
   Speed-20X

3. Supplementary_Movie_3.mpg
   Banded structure in a simulation with a long periodic channel.
   Geometry:- PBC
   System size = $14\ell \times 224\ell$
   No. of rods = 3230
   No. of beads = 246936
   Rod area fraction $\Phi_r = 0.20$
   Bead area fraction $\Phi_b = 0.20$
   Speed-300X

4. Supplementary_Movie_4.mp4
   Banded structure in a simulation with the annular geometry with outer boundary same as in our experiments.
   Geometry:- annular
   System size = 23ℓ (outer width)
   No. of rods = 297
   No. of beads = 2,344
   Rod area fraction $\Phi_r = 0.20$
   Bead area fraction $\Phi_b = 0.20$
   Speed-20X

5. Supplementary_Movie_5.avi
   Propagating waves in deep ordered state.
   Geometry:- PBC
   System size = $56\ell \times 56\ell$

No. of rods = 3,000
No. of beads = 62,735 (beads are hidden in the video)
Rod area fraction $\Phi_r = 0.19$
Bead area fraction $\Phi_b = 0.51$
Speed-20X
The colour of the rod tells about its orientation along the X direction.

6. Supplementary_Movie_6.mp4
   Band in experiments.
   Geometry:- Annular geometry
   System size = 23ℓ (outer diameter)
   No. of rods = 275
   No. of beads = 2,190
   Rod area fraction $\Phi_r = 0.20$
   Bead area fraction $\Phi_b = 0.24$
   Speed-4X

7. Supplementary_Movie_7.mp4
   Behaviour of the system with no beads.
   Geometry:- PBC
   System size = $56\ell \times 56\ell$
   No. of rods = 4,774
   No. of beads = 0
   Rod area fraction $\Phi_r = 0.30$
   Bead area fraction $\Phi_b = 0.0$
   Speed-20X