

# Polarization and dynamic phases of aligning active matter in periodic obstacle arrays: Supplementary Material

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## 1 Phases on Larger Systems

Our results for a system that has  $4\times$  the area (a box with side length  $100\sigma$ , keeping the same filling fraction  $f$ ) are consistent with the findings in the main text, suggesting that the behavior of the system is consistent across scales. In Fig 2 of the main text we see that the polarization curves for a larger system (open symbols) overlap those from the regular sized system. Meanwhile, Fig. 1 of this Supplementary Material shows three distinct phases in an anisotropic array of posts, which can be identified as the same ones on Fig. 5 the main text.

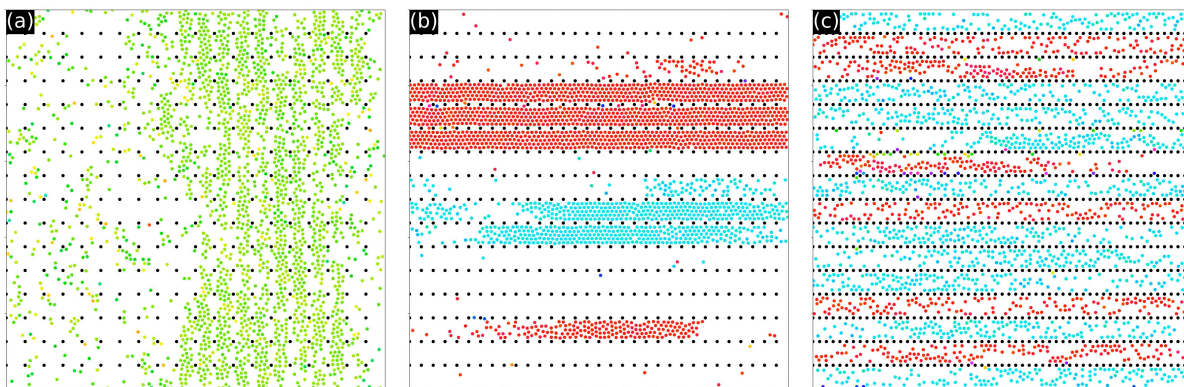


Figure 1: Three different phases found in a larger system, corresponding to the ones seen on Fig. 5 of the main text. (a) Quasi-isotropic (b) Coupled lanes (c) Uncoupled lanes.