

Controlling the Collective Behaviors of Ultrasound-Driven Nanomotors by Frequency Regulation

Zhihong Zhao ¹, Jie Chen ¹, Gaocheng Zhan ¹, Shuhao Gu ¹, Jiawei Cong ², Min Liu ^{1,*} and
Yiman Liu ^{1,*}

¹ Hubei Engineering Research Center of Weak Magnetic-Field Detection,
College of Science, China Three Gorges University, Yichang 443002, China

² School of Mechanical Engineering, Jiangsu University, Zhenjiang 212013,
China

* Correspondence: lmin@ctgu.edu.cn (M.L.); lym@ctgu.edu.cn (Y.L.)

Supporting Videos

Video S1. Three distinct collective behaviors of nanomotors in ultrasonic field with different frequencies. Part 1, Vortex-shaped rotation (1.3MHz); Part 2, Stripe-like chains (1.4 MHz); Part 3, Assembly into clusters and disassembling (2.8MHz).

Video S2. The transformation of collective behavior between different patterns.

Video S3. Changing the direction of stripe-like patterns from the x -axis direction to the y -axis direction.

Supporting Figures

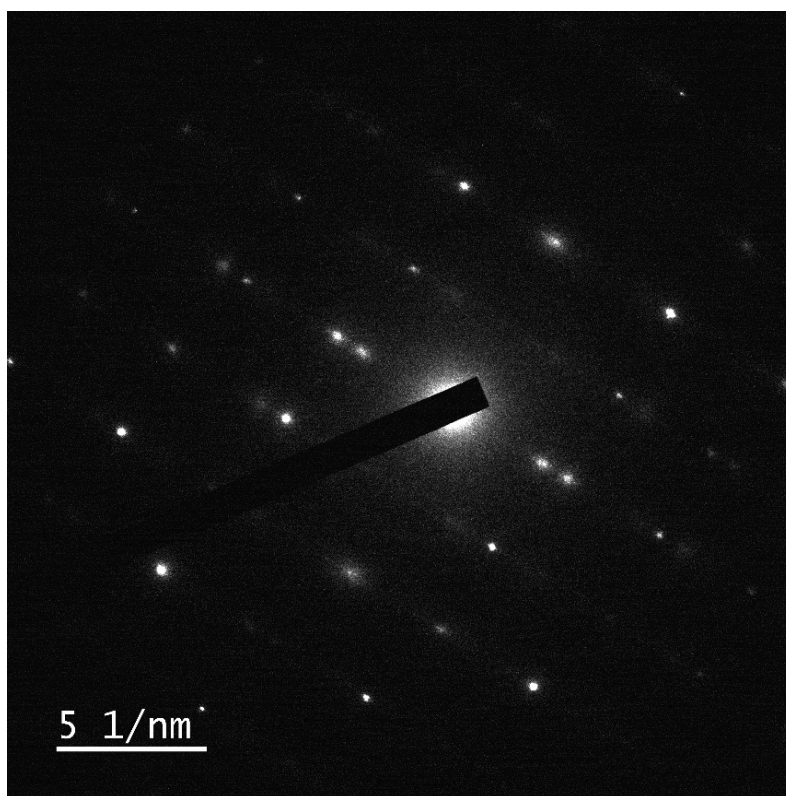


Figure S1. Lattice diffraction patterns captured by high-resolution transmission electron microscopy.

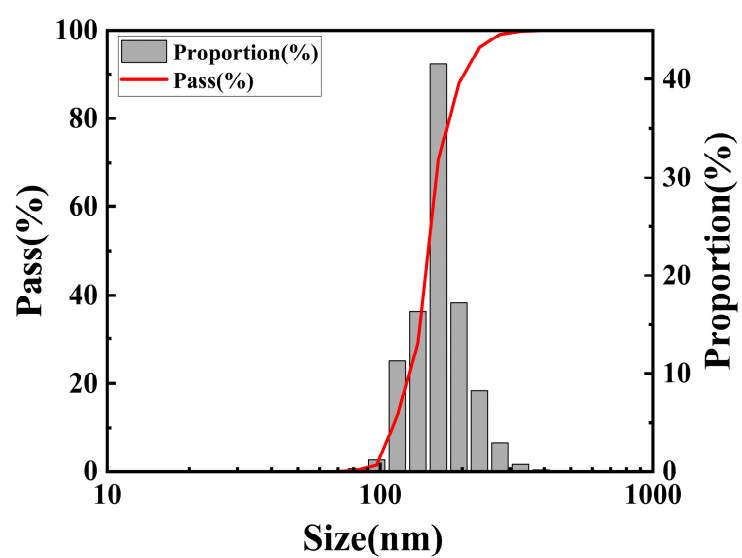


Figure S2. Lattice diffraction patterns captured by high-resolution transmission electron microscopy