Supporting Information

Turning Erythrocytes to Functional Micromotors

Zhiguang Wu,†,‡,§ Tianlong Li,† ,§ Jinxing Li,† ,§ Wei Gao,† Tailin Xu, † Caleb Christianson,† Weiwei Gao,† Michael Galarnyk,† Qiang He,‡ Liangfang Zhang*,† and Joseph Wang*,†

†Department of Nanoengineering, University of California, San Diego, La Jolla, California 92093, United States

‡ The Academy of Fundamental and Interdisciplinary Sciences, Harbin Institute of Technology, Harbin 150080, China

*E-mail: josephwang@ucsd.edu; zhang@ucsd.edu;

Supplementary Video 1: The movement of red blood cell (RBC) motors in PBS solution under various external stimulus conditions (without any stimulus; under magnetic field alone in the absence and presence of regular RBCs as control respectively; under ultrasound field alone; under both magnetic and ultrasound fields; under ultrasound field and magnetic guidance in the absence and presence of regular RBCs as control.

Supplementary Video 2: The movement of RBC motor under the ultrasound field and upon turning the magnetic field On and Off in the absence and presence of regular control RBCs.

Supplementary Video 3: The movement of RBC motor in various media, including PBS, cell medium, serum and blood.

Supplementary Video 4: The movement of RBC motor in whole blood under both magnetic and ultrasound fields over 30 min.

Supplementary Video 5: The movement of RBC motor under both magnetic and ultrasound fields before and after 24 h incubation in the whole blood.