Flow-electricity Coupling Fields Enhanced Microfluidic Platforms for Efficient Exosomes Isolation

Tao hu, a Wenhu Han, b Yuxuan Zhou, c Weilong Tu, C Xiao Li, *b and Zhonghua Ni, *a

a. Key Laboratory for Design and Manufacture of Micro-Nano Biomedical Instruments , Jiangsu

Province, School of Mechanical Engineering, Southeast University, Nanjing, 211189, China,

- b. Southeast Univ, Sch Mech Engn, Nanjing 211189, Peoples R China
- c. Southeast Univ, Sch Mech Engn, Nanjing 211189, Peoples R China.



Fig. S1 The microchannel observed under a microscope



Fig. S2 The schematic diagram of the ITO electrode, the shaded area represents the etched region of

the ITO film.



Fig. S3 S Section of the runner section. Coordinate system established at the center point of the inlet, showing

a parabolic distribution of flow velocity.



Fig. S4 The graph of the function and its maximum point.



Fig. S5 (A) The variation of the number of 7μ m particles collected at the upper outlet with time under different flow velocities. (B) The variation of the number of 100nm particles collected at the down outlet with time under different flow velocities. (C)The variation of the number of 7μ m particles collected at the upper outlet with time under different voltages. (D)The variation of the number of 100nm particles collected at the down outlet with

time under different voltages.



Fig. S6 The linear curve between concentration and fluorescence intensity.



Fig. S7 Distribution of pure exosome particle size