

Design and Fabrication Microfluidic Integrated DEP-QCM for Separating X-sperm and Y-sperm

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ABSTRACT: The novel integrated biochip is proposed to make a qualitative separation analysis of micro size life particles depended on the characterization of the buffer, and in conjunction with DEP-QCM chips for the quantitative analysis of the life particles. The sperm is chosen the test particles for this integrated biochip to do experimental verification. Through experiments, the y-sperm is caught on the DEP-QCM chip within NaOH buffer by 6MHz frequency and 5vpp voltage operated. The separation rate of X-Y sperm is near 70% through this experiment. Therefore, the integrated biochip could make a separation of life sperm and has potential to develop the separation technology for life micro-nano particles.

Keywords: Microfluidic, QCM, DEP, Sperm