Biochip microarray using magnetic force interaction and self-assembly

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Abstract: This paper describes a new constructing method of multifunctional biosensor using many kinds of biomaterials. A metal particle and an array were fabricated by photolithographic. The metal particles were in a multilayer structure. Biomaterials were immobilized on the metal particle. Sidewalls of patterned Ni dots on the array were covered by thick negative photoresist, and the array was magnetized. The array and the particles were mixed in a buffer solution, and were arranged by magnetic force interaction and random fluidic self-assembly. The particles were successfully arranged on the array. The biomaterial activities were detected by electrochemical methods. © 2005 IEEE.

Author Keywords: Biomaterials; Magnetic force interaction; Metal particle; Multifunctional biosensor

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