

CMOS integrated DNA microarray based on GMR sensors

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Abstract: A high density GMR sensor array was integrated with a standard CMOS chip for DNA hybridization detection. Absorption of magnetic nanoparticles by the hybridized DNA alters the sensor resistance, and generated electrical signals are directly measured with the on-die circuitry. The proposed biochip can be applied to other bio-reaction detection, e.g. protein assay, through different surface modifications.

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