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CMOS Biochips: The Good, the Bad, and the Hype

Thursday 14 September 2017 10:15 (45 minutes)

In the past two decades, there has been numerous attempts to take advantage of semiconductor solutions, broadly defined, to create high-performance biosensors and bio-molecular detection devices. The goal has always been to create molecular diagnostics technologies that offer the cost efficiency, miniaturization capabilities, and manufacturing robustness of consumer electronics devices. The outcome so far, has not been very exhilarating and unfortunately there has been few impactful products based on such efforts.

In this talk, we will discuss the use of CMOS processes and IC's for biotechnology in the form of integrated biochips. The focus will be not only the design, manufacturing, and the packaging tradeoffs of biochips, but also on the applications requirements and ideal use models in molecular biology. We will also discuss, in detail, the recently implemented CMOS biochips for nucleic acid (DNA/RNA) testing applications.

Summary

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Session Classification: Invited Talk