

# **Theoretical And Experimental Study Towards Fabrication Of Nanogap Dielectric Biosensor By Reversed Spacer Lithography**

## **Abstract**

A reversed spacer patterning technology using a sacrificial layer and a chemical vapor deposition (CVD) spacer layer has been developed, and is demonstrated to achieve sub-50 nm structures with conventional dry etching. The minimum-sized features are defined not by the photolithography but by the CVD film thickness. Therefore, this technology yields critical dimension (CD) variations of minimum-sized features much smaller than that achieved by conventional optical or e-beam lithography and has a great potential to fabricate a nanosystems for the electrical detection of biomolecular interactions.

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## **Author Keywords**

DNA hybridization; Lab-on-a-chip; Nanogap; Reverse spacer lithographic; Spacer patterning technology