

Fabrication of Silicon Nanowire for the Real-time Detection of β -Amyloid 1-42 based on Nanoimprint Lithography

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Recently, a successful outcome of solid device is in the development of nanoscale lithographic technique. We have successfully fabricated 100 nm wide silicon nanowire patterns on the 4 inch SOI wafer. Silicon nanowire field-effect devices have been used for the detection of biomolecules, where the binding of this positively charged β -amyloid 1-42 to n-type nanowire surfaces leads to an decrease in conductance. Consequently, these nanopatterned SOI substrates would be able to use as biopatform for nanoscale biochips. Acknowledgments : This research was supported by the Ministry of Knowledge Economy (MKE) and Korea Industrial Technology Foundation (KOTEF) through the Human Resource Training Project for Strategic Technology and by This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education, Science and Technology (2009-0069113) and by Nuclear R&D program through the Korea Science and Engineering Foundation (KOSEF) funded by the Ministry of Education, Science and Technology (MEST) of Korea (Grant No. M20706010003-08M0601-00310).