

## Low cost and highly reliable fabrication process of nanodevice for bioapplications

정희춘, 김진태, 유찬석, 안의진, 유혜성, 이수한<sup>1</sup>, 최대근<sup>1</sup>,  
임연호<sup>†</sup>

전북대학교; <sup>1</sup>한국기계연구원  
(yeonhoim@jbnu.ac.kr<sup>†</sup>)

Nano-devices have attracted strong interest in various research fields such as energy and life science. Even though the promising applications using this platform have demonstrated so far, these research fields still suffer from the absence of robust and low cost fabrication processes. To address these issues, this work presents novel fabrication process of nanodevice based on direct patterning using sequential processes of nanoimprinting and plasma etching. It was found that different plasma etch conditions after nanoimprinting can generate nanodevice with various surface characteristics, resulting dominant effects of device performance. Especially, this work focused on ZnO nanowire field-effect transistors (NWFETs) fabricated by this approach. The systematic analysis of plasma etching effects in this nanodevice will be discussed.