

Abstract Submitted  
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**Fabrication and electrical properties of single wall carbon nanotube channel and graphene electrode based transistors; Toward all carbon electronics**<sup>1</sup> SANG WOOK LEE, MIRI SEO, Konkuk University, JUNHONG NA, Korea University, YONG HYEON KIM, Konkuk University, BYEONG-JOO LEE, JIN-JU KIM, Kangwon National University, HOYEOL YUN, HAKSEONG KIM, HO-ANG YOON, Konkuk University, KEUN SOO KIM, Sejong University, GOO-HWAN JEONG, Kangwon National University, GYU TAE KIM, Korea University — A transistor structure composed of an individual single-walled carbon nanotube (SWNT) channel with a graphene electrode was demonstrated. The integrated arrays of transistor devices were prepared by transferring patterned graphene electrode array on top of the pre-deposited SWNTs which were aligned along one direction. Aligned arrays of SWNTs were synthesized by thermal chemical vapor deposition (CVD) method on quartz substrate. The micro scale contact electrodes and following circuit structures were defined by photo lithography on the large area graphene produced by CVD. Both of the single and multi layer graphene were used for the electrode materials. In this presentation, the device fabrication procedure, the contact properties, and the transistor performances of the device structures were discussed.

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