# Conductive polymer/elastomer composite for electronic skin(E-Skin) applications

<u>손효정</u>, 박민우[†]

숙명여자대학교

(mwpark@sm.ac.kr[†])

Recently, electronic skins (E-Skins) have been considered a next-generation human interactive sensor. E-skin comprises active sensing materials combined with stretchable electrodes and rubbery supporting substrates such as PDMS and Ecoflex. In particular, Ecoflex is biocompatible, and has excellent stretchability with 6 times higher than PDMS. Therefore, we design the device employing stretchable electrodes and an active layer on Ecoflex substrates. Patterned Ag NWs are embedded in Ecoflex, and SBS/P3HT composite is deposited using spin coating process. The embedded Ag NWs exhibit excellent retention of metallic conductivity up to 100% strain. The SBS/P3HT composite is also endured at 50% strain, and shows a constant gauge factor. Furthermore, the conductivity of the composite is significantly improved by doping Li-TFSI. We demonstrate the feasibility of our devices on the highly sensitive and stretchable E-skin as the bending signals are monitored by integrating the respective sensors.