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국문 강연제목: 바이오메디컬 응용을 위한 인쇄공정 웨어러블 플랫폼
영문 강연제목: Printed soft platforms for bio/medical applications

Abstract

Printing technologies have attracted tremendous attention in realizing customized soft electronics due to their advantages, such as non-vacuum, low-temperature, and non-contact processability. In this presentation, I would like to present our recent results of wearable platforms with printing solid-state elastic conductors into self-supporting three-dimensional (3D) geometries that promise the design diversity of soft bio/medical applications, enabling complex, multifunctional, and tailored human-machine interfaces. Our omnidirectional printing strategies achieve superior viscoelastic properties that provide the structural integrity of printed features, and pseudoplastic and lubrication behaviors that allow excellent printing stability simultaneously. Freestanding, filamentary, and out-of-plane 3D geometries of intrinsically stretchable conductors are directly written, achieving a minimum feature size <100 μm and excellent stretchability >150%. To illustrate the feasibility of our approach, we demonstrate skin-mountable electronics that visualize temperature on a matrix-type stretchable display based on omnidirectionally printed elastic interconnects.

Brief Biosketch

정승준 박사는 서울대학교 전기공학부에서 박사학위를 받고, UC Berkeley 전기컴퓨터공학부에서 박사 후 연구원을 지냈다. 현재 한국과학기술연구원의 책임연구원으로 재직중이며 인쇄공정을 이용한 스킨일렉트로닉스와 나노반도체소자 및 소자응용에 대한 연구를 수행하고 있다.

Dr. Seungjun Chung received his Ph.D. degree in electrical engineering from Seoul National University, Korea in 2012. Then, he joined Prof. Subramanian's group in Dept. EECS, University of California, Berkeley as a postdoctoral researcher. He is now a principal research scientist in the Soft Hybrid Materials Research Center, Korea Institute of Science and Technology (KIST) and adjunct professor in KU-KIST Graduate School, Korea University. Dr. Chung is a KIST Young Fellow and expert in technology level evaluation, Ministry of Science and ICT, Korea. His current research interests are in printed skinelectronics and their physics, manufacturing of low-cost thin film nanoelectronics, and nanocomposites for next generation electronics.