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Optimization of Ferroelectric Polymer\Graphene Films for Transparent and Flexible Electronics ORHAN KAHYA, JING WU, GUANG-XIN NI, CHEE-TAT TOH, Department of Physics, National University of Singapore, SANG-HOON BAE, JONG-HYUN AHN, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, BARBAROS OEZYILMAZ, Department of Physics, National University of Singapore — Nonvolatile, electrostatic doping of graphene-based devices with ferroelectric polymers such as Poly (vinylidene fluoride-trifluoroethylene) are promising for realizing ultra-fast, flexible memory devices, nanogenerators and actuators. More recently, the same approach has been shown to provide an alternative route in enabling graphene based transparent electrodes for touch screen applications. Here, we report a systematic study of optimizing the ferroelectric polymer-graphene heterostructure as a function of thickness, various copolymer blends and coating techniques. Optimized films show outstanding mechanical properties, low sheet resistance ($\sim 100\Omega$/sq) and optical transparency levels as high as 96%.

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