

# Charge Transfer between Graphene and a Strong Electron Acceptor, Tetrafluorotetracyanoquinodimethane (F4-TCNQ)

이지은, 김선호, 강성규, 양성익, 류순민

경희대학교 응용화학과

Graphene, a single atomic layer of sp<sup>2</sup>-bonded carbon, shows substantial potential for various applications. Chemical manipulation of its electronic properties will be of great importance. In this study, we have investigated interaction between graphene and organic molecular layer of tetrafluorotetracyanoquinodimethane (F4-TCNQ), a strong electron acceptor. F4-TCNQ films of varying thickness were evaporated onto graphene mechanically exfoliated on SiO<sub>2</sub>/Si substrates. F4-TCNQ molecules increase the frequencies of Raman G and 2D bands of graphene while decreasing the line-width of G band and 2D/G intensity ratio, which is consistent with increase of hole density in graphene. These results exemplify the possibility of chemical tuning of electronic properties of graphene.

**Keywords:** Graphene, F4-TCNQ, Charge transfer