

**Effect of Externally Introduced Carriers on
the Electronic Structure of Fullerite and
Fullerides**

Susumu Saito¹ and Koichiro Umemoto¹

¹Department of Physics
Tokyo Institute of Technology
2-12-1 Oh-okayama
Meguro-ku
Tokyo 152-8551
Japan

We study the electronic structure of the pristine C₆₀ fullerite with externally introduced carriers. From the density-functional study it is found that introducing electrons into the semiconducting C₆₀ widens both valence and conduction bands. On the other hand, introducing holes is found to narrow them considerably. We also study the effect of the carrier introduction into the semiconducting body-centered cubic Cs₆C₆₀ fulleride, which is found to show similar band-width change and to become a good candidate for the superconductor.