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

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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 va-

cence and conduction bands. On the other hand, intro-
ducing holes is found to narrow them considerably. We
also study the effect of the carrier introduction into the
semiconducting body-centered cubic C56C60 fulleride,
which is found to show similar band-width change and
to become a good candidate for the superconductor.