

STABILITY SEQUENCE OF FULLERENE C₆₀
ANIONS WITH SCREENED INTERELECTRON
INTERACTION

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S u m m a r y

Calculations of fullerene C₆₀ with N extra electrons ($N = 1, \dots, 4$) are performed in the tight-binding model with the Yukawa-Ohno electron-electron potential. Full configuration interaction is taken into account within the space of six functions from two lowest vacant orbitals. Using the icosahedral C₆₀ symmetry, the analytic expressions for anion energies are derived by the molecular invariant method. When the Coulomb potential is replaced by the Hubbard short-range one, the sequence of the ground state energies of anions change for the opposite with respect to N . The predicted energies are consistent with experimental data only when the Coulomb long-range interaction with slight screening is involved.