Abstract Submitted
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Electronic properties of carbon tori in external fields[1] F. L. SHYU, Department of Physics, Chinese Military Academy, Kaohsiung, Taiwan, C. C. TSAI, C. W. CHIU, M. F. LIN, Department of Physics, National Cheng Kung University, Tainan, Taiwan — Electronic states of achiral carbon tori in electric and magnetic fields are studied by the tight-binding model with the curvature effect. Electronic properties, such as electronic states, energy gaps, and density of states, are very sensitive to the changes in the direction and the magnitude of the external fields. The electric field can widen the π-electron energy width; furthermore, there are more low- and extreme-energy states. Energy gaps are drastically modulated by **E.** The complete modulation of energy gap ($E_g \neq 0$ to $E_g = 0$) happens more frequently when **E** deviates from the symmetric axis, or its magnitude is sufficiently large. The electric field could change the state degeneracy. Moreover, the modulation of electronic states is enhanced by the magnetic field.

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