

Abstract Submitted
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The Calculation of the Polarizaion for Quantum voids in Applied Electrical Field CHIN-SHENG WU, Yuan Ze University, Taiwan — Under certain conditions voids or approximately spherical cavities may be formed when a electronic device has been long term used and they result in a swelling and deterioration of the device infrastructure. The formation and properties of such voids have been extensively studied because of the practical implications for damaged transistor devices. We calculate the electronic profile at the interface of voids with the density functional theory. We introduce the electronic profile to the dielectric constant of multilayer of the boundary area of the voids, and using the Laplace equations and the standard boundary conditions at the various layers of the voids. We obtain the electrical field around the voids. The polarization therefore can be found.

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