# Review of: "Minimizing transistors and entering dimensions below 100 nanometers in the performance range of nanoelectronics technology, although it has many advantages, but it faces various challenges"

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**By reducing all the horizontal and vertical dimensions of the transistor, the electric charge density increases in different areas of the nano-transistor, or in other words, the number of electric charges per unit area of the nano-transistor increases.**

***This has two negative consequences :***

**First, with the increase in electric charge density, the possibility of electric charge discharge from the insulating areas of the transistor increases, and this causes damage to the transistor and its failure. This event is similar to the discharge of excess electrical charge between the cloud and the ground in the phenomenon of lightning, which causes the ionization of air molecules into negative and positive ions. Secondly , with the increase of the electric charge density, the electrons may leave the range of the radius of one atom and enter the range of the neighboring atom's radius under the influence of repulsive or abduction forces, which have now increased in value. This is called tunneling in quantum physics. Electron tunneling from one atom to the adjacent atom is a phenomenon that happens a lot between electrons in small dimensions. This phenomenon is the basis of the work of some electronic components and some nanoscopes. But in nanotransistor, this phenomenon is not a useful phenomenon, because electron tunneling from one atom to the adjacent atom may continue and cause an electric current. Minimizing transistors and entering dimensions below 100 nanometers in the performance range of nanoelectronics technology, although it has many advantages, but it faces various challenges.**

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