

Abstract Submitted  
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**Study on the Solar Cell Using Mathematical and Physical Analysis** MIN KYU KIM, RICHARD KYUNG, Choice Research Group — Renewable, green energy is an important field of research amidst the 21st century energy crisis. Although many researchers around the world have been consistently looking for new energy sources, there is a lack of research on efficient storage of energy produced from eco-friendly sources. This research considers how to increase the electric field and capacitance through inserting metal oxides and organic materials as dielectrics to use such dielectrics as a substantial tool for sustainable solar cell development. Optical properties of isotropic thin organic materials, such as refractive index, dielectric constants, and wavelength were considered in the calculations of solar energy. In addition, the mathematical equations, geometrical variations, and material properties were considered to check those dependencies on the efficiency of the solar cell. The research focuses on increasing electric properties of solar batteries using different dielectrics, differing the structure of capacitors and combinations of inorganic metal joints and organic carbon links. The goal is to increase the maximum capacity of batteries that can store more energy with better efficiency.

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