

Abstract Submitted
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Conductivity and Stability Analysis of Dielectrics Using Computational and Physical Calculations JAEMIN CHOUNG, kimball union academy, DUONG DAI DINH, West Catholic High School, RICHARD KYUNG, Choice Research Group — Many of the researches around the world had been consistently looking for new energy source, but not as much as on the efficient storage of energy produced from these eco-friendly sources. This research considers how to increase the capacitance though inserting dielectrics to use it as a substantial tool for sustainable development. Also the Metal Organic Frameworks (MOFs), composed of inorganic metal joints and organic carbon linkers, are considered for the study since the MOFs are porous and have large spaces within them that can store charges for alternative energy sources. This research focuses on increasing capacity of batteries using different materials as dielectrics, differing the structure of capacitors, and various combinations of inorganic metal joints and organic carbon links in order to increase the maximum capacity of batteries that can store more energy with better efficiency. Computational physics, modeling and electron properties have been employed to figure out the stability and conductivity of the materials. Computer programming was used to optimize the movement of potential charges within capacitors in order to measure the maximum capacitance possible between capacitors and their change in geometry.

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