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**Metal Organic Frameworks(MOFs) as a Renewable Green Energy**

JUNE PYO SUH, RICHARD KYUNG, Choice Research Group — Renewable green energy and eco-friendly technology have become pressing fields in research amidst the 21st century energy and environmental crisis, and Metal Organic Framework (MOF) has emerged as a potential solution to many of these problems. Composed of inorganic metal and organic carbon linkers, MOFs porosity and subsequent gas adsorptive property has made MOF a prospective candidate for storing and filtering atmospheric pollutants, gases that accelerate global warming, and alternative energy sources. In this paper, Density Functional Theory (DFT), a computational chemistry, has been employed to figure out the stability and thermodynamics of different structures of MOFs, and to model the electron properties of the compound. With Avogadro, a program that allows performing such computations for a compound, this paper demonstrates the optimized geometry energy levels and fully determines the theoretical values of the structures atomic properties. By doing such analysis, this research seeks to allow scientists and engineers to develop more efficient ways to check global warming and air pollution, to store and use energy, and to provide a refreshing driving force to the renewable, green energy research.

Richard Kyung  
Choice Research Group

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