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Simulation and Analysis of Hybrid PV Panel

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Abstract: *This article is about the simulation and design of a hybrid photovoltaic-thermal (PV/T) solar system. It is a combination of photovoltaic panels with electrical components connected to the base and water running in copper pipes. The advantage of this process is that the photovoltaic equipment operates at a lower temperature and is therefore more efficient and produces hot water simultaneously with electricity. A system that can provide electricity and heat would be a very interesting application. The main idea of our project is to reuse the energy from the solar panels and make it usable. We created our design in Catia V5 and finished with some tools like full of holes and glass. Once it's done in Catia V5 we keep it and we like Abaqus software for analysis. We export our models from Catia to Abaqus in IGES format. We then use various tools in Abaqus to complete the analysis .Energy savings and efficiency are important today. As the cost per watt-hour falls each year, renewable energy is becoming more attractive. This happened because of extensive research over the past few years. Solar energy is an energy promise that will never go away. A combination of these systems that is Hybrid systems are gaining importance due to better use of solar energy. Use the efficient material concept, where the product is made of materials whose strength gradually changes, such as thermal conductivity, where solar energy can be used more efficiently. With this idea, it is possible to create a functional stepped replacement for photovoltaic panels and bulk water pipes.*

Keywords: Hybrid PV Panel, Solar Energy, Design, ThermalAnalysis, Optimizing.

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