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PROJECT POLACENAFI SOLAR PANELS: INNOVATING SUSTAINABLE SOLAR PANELS USING POLY LALACT ACID (PLA) AND CELLULOSE NANO-FIBERS (CNF) AS ALTERNATIVE TO COCONVENTION MATERIALS

ORATA, JAMES BRIAN I.
ILLAO, RUIEL Y.
GARCE, SHANE LOUISE K.
Tuy Senior High School

ABSTRACT

The growing electricity demand amidst the rising environmental pollution is a controversial issue globally. As the population and industries expand, the urgency to develop alternative energy solutions is intensifying. The wastes coming from the traditional energy production emits harmful effects to the environment and contribute to the deterioration of habitats. The application of poly lactic acid and cellulose nano fibers as an energy source generates a sustainable solution in minimizing the economic issues. This project involves the conversion of poly lactic acid and cellulose nano fibers to efficient and economically feasible energy production. By utilizing these biodegradable and abundant materials, the project not only reduces reliance on fossil fuels but also diminishes resource depletion and waste generation. Additionally, this seeks to introduce a renewable energy source which has the potential to provide a sustainable and economically friendly energy production. This project strives to strengthen energy security while making sure that energy production is both accessible and cost-effective. Thus, this project shows that PLA and CNFs can be alternative materials, given that they are both biodegradable and reduce resource consumption and

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waste, offering a superior option for energy production across various industries and altering traditional solar panels. Ultimately, this initiative aspires to contribute to a more sustainable energy landscape that balances ecological integrity with economic viability. This research could pave the way for innovative changes in the energy sector as this aims to position PLA and CNFs as viable alternatives in the quest for sustainable energy solutions for future energy needs.