**Synthesis of Organic Dye as Dye-Sensitized Solar Cell**

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**Abstract:** One of the most potential renewable energy sources in Nigeria is hydropower followed by solar energy. Renewable energy is fast gaining importance as an energy resource to help aid the national energy depletion crisis of fossil fuel and coal. Therefore, there is need to focus on solar energy due to its abundant availability across the globe. In this paper, synthesis of Dye Sensitized Solar Cell (DSSC) using organic dyes extracts from flame tree flower and pawpaw leaf were blended together in ration 1:1. Screen printing method was used to synthesize DSSC. The photoelectrochemical performance of the blended dye showed an open circuit voltage (Voc) of 0.518 V, short-circuit current density (Jsc) of 0.744 mA/cm2, fill factor (FF) of 0.69 and conversion efficiency (η) of 0.27 %. These results shows that the mixed dye from the flame tree flower extracts and pawpaw leaf extracts has potential in the development of a feasible working organic dye as dye sensitizer.

**Keywords**: Dye-sensitized solar cell (DSSC), organic dye, synthesis, renewable energy