

## The Extract of Temulawak as A Light Antenna in 3<sup>rd</sup> Generation Solar Cell

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### ABSTRACT

Global warming and depletion of fossil fuels urge the development of efficient and cost effective solar energy conversion technology that fulfills the next generation green energy demand. In this work, dye-sensitized solar cells (DSSC) as a 3<sup>rd</sup> generation of photovoltage solar cell, due to low cost material and simple fabrication method, emerging as viable alternative to conventional solar cells. DSSC which using temulawak as a natural organic dye have been prepared on transparent conductive oxide (TCO) glass substrate with active area 2 x 2 cm<sup>2</sup>. This cell was achieved under standard sun condition AM 1,5 irradiation and producing a highest current 153,4  $\mu$ A and voltage 0,233 Volt with a short circuit current density 0,036 mA/cm<sup>2</sup>, an opening circuit photovoltage 0,379 volt. This result showed that temulawak giving a promising future as a light antenna in Dye Sensitized Solar Cell (DSSC).

**Keywords :** *Dye Sensitized Solar Cell, Photosensitizers, Organic Dye*