



**FINAL YEAR PROJECT REPORT**

**IMPACT ESTIMATION OF COTTON DUST AND  
OTHER ENVIRONMENTAL FACTORS ON SOLAR  
PANELS IN THE TEXTILE INDUSTRY**

**In fulfillment of the requirement  
for degree of  
BEE (Electrical Engineering)**

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# IMPACT ESTIMATION OF COTTON DUST AND OTHER ENVIRONMENTAL FACTORS ON SOLAR PANELS IN THE TEXTILE

## INDUSTRY

### ABSTRACT

Electricity generation from solar energy has a huge potential since it relies mainly on an abundant and clean source. The global textile industry which is the key share-holder in economy and exports of various developing and developed countries, is shifting towards clean and reliable energy resources. Many textile industries have installed solar power plants to fulfil their power demand. In textile industries, large amounts cotton dust emission and exposure is a crucial problem. The accumulation of cotton dust on solar panels also causes performance degradation of panels. This project aims to experimentally investigate the performance deterioration of solar panels caused by cotton dust and other environmental factors such as wind, humidity, and temperature variations. The deposition of cotton dust on solar panels decreases output power and conversion efficiency as low and attenuated irradiance reaches the outer surface of the panel thus resulting in performance degradation of solar panels.

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