

# **AUTOMATIC RAILWAY TRACK CRACK DETECTION SYSTEM**

A Project report submitted in partial fulfillment of the requirements for the award of  
degree of

**BACHELOR OF TECHNOLOGY**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

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**DEPARTMENT OF**

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**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**

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**VISAKHAPATNAM DISTRICT-531113**

**2015-2019**

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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### BONA FIDE CERTIFICATE

This is to certify that the project entitled “AUTOMATIC RAILWAY TRACK CRACK DETECTION SYSTEM” in partial fulfillment for the degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING at AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, MAKAVARAPALEM, VISAKHAPATNAM is an bonafide work carried out by P.ANAND SAI RAM (15811A0462), T.JAGADISH (15811A0472), S.SRINIVAS (15811A04769), K.SANTOSH KUMAR (16815A0412) under the guidance and supervision during 2015-2019.

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**PROJECT GUIDE**

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## ABSTRACT

This project analyzes the most prominent smart grid functions from the Internet of Things implementation perspective. A Smart substation is proposed as a solution that will handle intelligent operations, such as real-time monitoring, control, and system management, in a successful manner. With rapidly-evolving IoT network, maintaining cyber privacy and security will present a great challenge in the future and solutions to efficiently overcome these weaknesses should be further investigated and developed. All-Pervading sensing enabled via Wireless Sensor Network (WSN) technologies has created a great impact on several areas of modern living stratum. It provides the facility to measure, conjecture and understand the environmental indicators starting from natural resources to metropolitan environment. The outburst of these devices in communicating-actuating network explores the Internet of Things (IoT), in which sensors and actuators binded together around us. Then the information is being shared among devices to develop a fully automated environment.

Nowadays there are several applications supported by IoT, among that home automation, health care, social welfares are the major areas which attained more importance. In order to deal with emergency situations that arise in electricity supply station due to abnormal functioning of transformers, capacitors and reactors, its technological parameters must be monitored. The number of parameters to be measured and monitored is likely to error prone when it would be processed manually. This proposed system presents an IoT based real time online electric substation monitoring system and it can monitor as many transformers located at particular location. By regular remote monitoring of transformers, capacitors, reactors huge loss can be avoided and also can make accurate decisions using IoT