

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI



A Project report on

“WIRELESS SENSOR NETWORKS IN FOREST FIRE DETECTION & PREVENTION”

A dissertation submitted to the Department of Electronics & Communication Engineering of Visvesvaraya Technological University, in the partial fulfillment for the Award of Degree of Bachelor of Engineering during the academic year 2014-2015.

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ABSTRACT

Recent years have seen a considerable increase in the frequency of forest fires due to various factors that include climate changes, human activities which are essential for economic development. Uncontrolled human activities and abnormal natural conditions disturb the environmental conditions resulting in occurrence of forest fires frequently which lead to serious disasters, destroying a large portion of forest resources and destruction of human environment. Forests play a vital role in preserving the environment and natural human resources, which play a major role in maintaining ecological balance. Forest fires are catastrophic to the natural resources contained in the forests. It is hence imperative that forest fires are detected at the earliest. This paper describes the architecture of wireless sensor network and a scheme for data collection in real-time forest fire detection. Sensors have limited computational power and use low power batteries, which makes energy efficiency an extremely important factor for consideration. The performance of the approach of packet transmission at discrete time intervals vs continuous packet streaming is compared and is evaluated in terms of energy expenditure by simulation. The simulation results are good to encourage the environmentalists to adopt this technique in protection of forest.