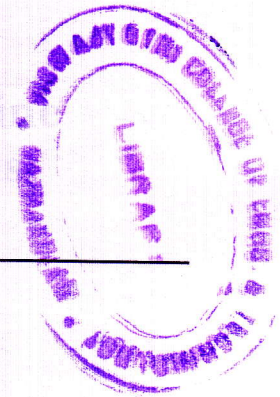


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1. Introduction

Portable and autonomous electronic devices are becoming increasingly popular. One of their major drawbacks is their dependence on batteries [1]. Thus, battery life is a crucial design factor, especially when wireless capabilities are required, because it involves a high percentage of total consumption by the WSN [2]. One technique to store the harvested energy and increase the amount of energy available is using supercapacitors or Electric Double Layer Capacitors (EDLC). They are attractive because they have higher power density than batteries, do not require special charging circuitry, and have a long operational lifetime. In order to minimize or optimize the power consumption, supercapacitors on energy harvesting systems must act as a primary storage device with a battery backup whenever it is necessary [3]. The benefits of using supercapacitors are many: increased battery life, less electromagnetic interference, and better operation of analogic electronics. They are explained at length in the literature [4].