

Design and analysis of multi efficiency motors based high endurance multi rotor with central thrust

ABSTRACT

Multi rotors have quickly expanded them self around the globe. The technology being evolving contains a lot of limitations in there use for military and commercial purposes. This paper addresses the limitation of flight endurance by presenting a nontrivial design of multi rotor. The proposed design utilizes multi efficiency type motors. Combination of low efficiency motors for stability and high efficiency motor for load carrying provides over all energy proficient flying platform. The paper discusses detailed theoretical analysis of all thrust creating elements, frame design and power consumption entities of proposed design. The paper also presents experimental results for proof of concept of suggested design through implementation of theoretical design on COTS (Commercial Off the Shelf) components based platform.