

Abstract

Ahmed Y Elroubi

QUADROTOR DESIGN, SIMULATION and IMPLEMENTATION

Unmanned Aerial Vehicles (UAVs), also called unmanned aircraft systems, have recently reached unprecedented levels of growth in diverse military and civilian application domains. The goal of this paper is to design and construct a quadrotor that is capable of indoor and outdoor hovering using a Mechatronics system for flight stability and navigation aspects using gyros, accelerometers, pressure sensor, and GPS. Through working on this paper mathematical models had been studied, a CAD model had been built for estimating mass and inertial properties of the physical model, a Simulink had been implemented for estimating the response of flight dynamics, and finally a physical model had been built as a prototype for the UAV.