

(12) PATENT APPLICATION PUBLICATION

(21) Application No.2023410503 19 A

(19) INDIA

(22) Date of filing of Application :26/07/2023

(43) Publication Date : 01/09/2023

(54) Title of the invention : DESIGN AND DEVELOPMENT OF SOLAR POWERED LITHIUM-ION BATTERY DRONE

(51) International classification :B64C0039020000, H02J0003380000, B64D0027240000, G05D0001100000, B64C0027280000
(86) International Application No Filing Date :PCT// / :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number Filing Date :NA :NA
(62) Divisional to Application Number Filing Date :NA :NA

(71)Name of Applicant :
1)St. Martin's Engineering College
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :
1)Dr. D. V. Sreekanth, Professor and HOD, Mechanical
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
2)Mr. L. Sunil, Assistant Professor, Mechanical
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
3)Mrs. K. Hemalatha, Assistant Professor, Mechanical
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
4)Mr. V. Sripal, Assistant Professor, Mechanical
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
5)Parija Dipak, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
6)Lingala Justin Jensen Joseph ,Student ,MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
7)Peddi Manish Reddy, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
8)Kedari Saiteja, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
9)Pakala Sai Pavan Reddy, Student MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
10)Mandala Sai Krishna, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
11)Nakka Chaaya Anudeep Sai, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
12)Chappa Lokesh, Student, MECH
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----

(57) Abstract :

The investigation of the project is to design & fabricate the drone; it can be determined by the power consumption of the drone during various flight modes and weight distribution of the drone. The project aims to modify a remote-controlled (RC) UAV powered by a combination of solar and battery-stored power. The major objective is to greatly increase the flight endurance of the UAV by the power generated from the solar panels. The power system is first designed by selecting the suitable system architecture and then by selecting suitable components related to solar power. The flight control system is configured to conduct flight tests and validate the power system performance. The decrease rate of battery voltage during the stable level flight of the solar-powered UAV built is also much slower than the same configuration without a solar-power system .The major consideration for UAVs is sufficient system level specific power (W/kg) for takeoff and high specific energy (W/kg) for long endurance. The high specific power is gained from using high power fuel cells and keeping components lightweight.

No. of Pages : 15 No. of Claims : 6