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AUTONOMOUS EXPLORER

Our project aims at exploring the unknown territories. Unknown territories are the place where man cannot go and perform any scientific research our model is NASA's curiosity robot, where shortcoming of the curiosity robot is being overcome in our project. The weight of the wheels along with its ability to break rough surface is being replaced by servo arms which can provide ability to our robot to morph its own body in terms of obstacles or hindrance. By reducing the weight of the robot the weight of the landing equipment and hence proportionally the circuit design and the cost of the entire project might get reduced. The efficiency of the curiosity robot is the major factor to be considered. The same efficiency can be adopted while the arms part alone can be replaced. Additionally the robot is capable of making series of transformation such that the problem in adapting to various hindrances might be solved. Thus in our project the weight as well as the cost is reduced by servo motors and the ability to overcome the obstacles by morphing its own body.

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DESIGN ,CONTROL AND ANALYSIS OF QUADROTOR FOR AERO BIOLOGICAL SAMPLING

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DESIGN AND ANALYSIS OF A REMOTE CONTROLLED ORNITHOPTER FOR THE IMPLEMENTATION OF AN AUTOPILOT

In recent years the study of flying vehicles propelled by flapping wings, also known as orinthopters, has been an area of interest because of its application to micro aerial vehicles (MAV). These Miniature vehicles seek to mimic small birds and insects to achieve never before seen agility in flight. This raised a host of new problems in vehicle dynamics and control to explore. In our project we planning to design an Ornithopter having the wing span of 1.2 meters. We are using two servo motors, one for an elevator and other for the rudder and also a brushless dc motor having efficiency, higher maneuverability, and low fuel consumption, safety and provide low noise. It cannot rotate like an aeroplane but imitates the birds resembling its nature. We are designing it to support the payload of about 10grams which can be the video camera or some of the sensor packages. It is implemented with the battery package of 7.4V/350mA which is suitable to receive the signals from the remote controller as well as the payload we have applied. Besides designing such a typical flying robot with flapping wings, we are analysing the transmission and reception of the radio signals for the implementation of an autopilot system. In the early days of aviation, aircraft range increased allowing flights of many hours, the constant attention led to serious fatigue. An autopilot is designed to perform some of the tasks of the pilot. Modern autopilot is designed to perform some of the tasks of the pilot. Modern autopilot uses computer software to control the aircraft. The software reads the aircraft's current position, and then controls a Flight Control System to guide the aircraft.

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DESIGN OF GDI BASED 8 BIT MULTIPLIER USING LOW POWER ADDER CELLS

Gate diffusion input (GDI) a new technique of designing low-power digital combinational circuit is described. This Technique allows reduction in power consumption, transistor count, propagation delay and area of digital circuits. This approach allows implementation of a wide range of complex logic functions using only two transistors. Gate Diffusion Input proposes and compared with traditional CMOS. Comparison of Gate Diffusion Input transistor count with CMOS is presented. Simulation results shows that the purpose Gate Diffusion Input has better performance in terms of power consumption and transistor count in compared to CMOS design. In our project, we designed the 8*8 array multiplier based on Gate Diffusion Input and the simulations are performed by CADENCE VIRTUOSO based on 180nm CMOS technology with the supply voltage of 0.7V.

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A LOW VOLTAGE ROBUST SCHMITT TRIGGER BASED SUBTHRESHOLD SRAM FOR MICROELECTRONIC APPLICATIONS

The main objective of our project is to design a power efficient SRAM which has reduced supply voltage, minimum power consumption, minimum delay and maximum stability of output for the read and write operations. The traditional SRAM makes use of CMOS transistors that consumes more power and has a supply voltage of 1.8v. As substitution we are using the SOI transistors in the place of CMOS transistors which lead to reduced power consumption and reduced supply voltage of 0.7V. it has the property of switching to ON state at lower threshold and switching OFF at higher threshold .We are also making use of the Schmitt trigger concept and the feedback mechanism in order to maintain the stability of output at the conditions of reduced voltage. In between the two thresholds of the Schmitt trigger that is in the tristate of the Schmitt trigger it acts as a memory cell. The reduction of area is also achieved by reducing the number of transistors per unit cell. The idea of single cell SRAM has been extended to the design of 4X4 SRAM which also operates at the reduced voltage conditions. The optimized design for the decoders and the buffers are also in order to drive the heavy Load of SRAM cell is also proposed in our project. The power and delay analysis for the SRAM cells are done using CADENCE-VIRTUOSO, which is known for its accuracy

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