

# Quality Circle 2021-22

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**Frugal Innovations**

**Best practices Activity 2021-22**

**Virtual Lab Development**

K.E. Society's  
Rajarambapu Institute of Technology,  
Rajaramnagar.  
ETC Engineering Department




# Outcome of Virtual Lab are: Paper published in conference.

Proceedings of the National Conference on "Emerging Trends in Electric-Mobility & Sustainable Development: Opportunities & Challenges", May 13-14, 2022, ISBN: 978013479496

## Fuzzy Power converter for Regenerative Breaking System

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Abstract: Electric vehicle regenerative power is calculated from the four controller based braking system. Due to friction of the brake pad energy is stored in the form of heat in several braking system. In the paper a four controller based regenerative braking system is applied. The new braking system provides the optimum results for stopping the vehicle and also generates the working power. Speed distance and weight variables are considered for power calculation which improve the efficiency of the braking system.

Keywords-- Regenerative, fuzzy, braking, battery etc.

I. INTRODUCTION  
Variable electric vehicles are becoming an essential

II. LITERATURE REVIEW  
Researchers explained regenerative braking system.

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## Estimation of Heat transfer rate of car radiator by using MATLAB-Anfis tool

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Abstract-- Inadequate heat dissipation can cause the engine to overheat, resulting in lubricating oil breakdown, metal deformation of engine parts, and serious wear between engine parts. Automotive radiators must be developed to be more compact while still ensuring high levels of heat transfer performance to reduce the stress on the engine caused by heat strokes. Fuel and air condition to produce power in a world a greater place. The addition of fan is one method for increasing the radiator's cooling rate. It increases the air convective heat transfer coefficient and increases the heat transfer area. However, the traditional strategy of employing fan and micro-channels to increase cooling rate has hit its limit. The optimal mass properties for a low power radiator specially for use in space were investigated[1]. Performance, heat transfer fluid on the air and fluid sides, such as water

## Problems Identified Through Brainstorming at A Glance

Sr. No.	Problems Identified
1	Remote-access to simulation-based Labs
2	Virtual laboratory for Antenna Lab
3	Virtual laboratory for Analog Communication Lab
4	Virtual laboratory for Control System Lab
5	Virtual laboratory for Basic Electronics
6	Virtual laboratory for Microcontroller Lab
7	Virtual laboratory for Digital Electronics Lab
8	Virtual laboratory for PLC Lab
9	Virtual laboratory for DComm Lab
10	Virtual laboratory for AComm Lab
11	Virtual laboratory for Satellite Communication Lab
12	Virtual laboratory for C++ Programming Lab
13	Virtual laboratory for Python Programming Lab

### Virtual lab

With the help of Multisim Elvis III we can do all virtual experiment and real time simulation.

URL: <https://www.multisim.com/help/getting-started/streaming-data-to-measurements-live/>




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