

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM, KARNATAKA



A Project report on

PORTABLE AUTOMATED DOSA MAKING MACHINE



KSCST APPROVED

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ABSTRACT

The objective of this project is to conceptualize and fabricate a fully functional Portable Automated Dosa making machine. It allows the user to obtain ready to eat dosas at the press of a button with no prior preparation or skilled labour. Dosas are not only one of the most delicious Indian dishes and meals but also have been a staple of South Indian cuisine. A great deal of research and study has gone into scientifically analyzing the process of cooking of a dosa. The cooking of the rice cake usually happens at around 120-140 °C. For all trial and error and experimentation purposes, commercially sold “ID” batter has been used and will be treated as standard for all obtained results. Sunflower cooking oil has been used to aid in the cooking of the dosas.

The usual method of making dosas involves pouring the batter around in a rough spiral motion and then spreading more or less uniformly. Since the idea was to make it automated the motion had to be carried out by motors. However, rotating an arm or a batter holder all around the pan by motors is not only elaborate but also cumbersome and time consuming. So, instead we decided to have the pan itself rotate while the arm stays stationary, providing the necessary relative motion between the spreading instrument and the pan. The arm we decided to attach to a vertical column due to the need for automation which could lower and dispense the batter and spread it too, increasing its functionality and making it more compact. Since the oil is also needed to cook, the dispensing of oil also is carried out via the arm. To really enhance the automated experience and to reduce human intervention we decided to even scrape the dosa off of the pan automatically and drop it off to one side where it is easily receivable. The batter and oil would of course have to be easily accessible by the machine so they were designed into a functional roof.

In addition to all of these automated mechanisms, we had to fit it in a convenient portable module, which we can manufacture within a realistic budget. Stepper motors were used for the movement of column, pan and scraper; while the oil and batter valves are controlled by micro servomotors.