KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

INDIAN INSTITUTE OF SCIENCE, BANGALORE -560012

A Project Report entitled

"DEVELOPMENT AND EVALUATION OF DEGRADABLE LDPE BASED PACKAGING MATERIAL HAVING MULTIFUNCTIONAL PROPERTIES FOR FOOD CONTACT APPLICATIONS"

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Submitted in partial fulfillment for the award of the degree of Bachelor of Engineering in Polymer Science and Technology

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SYNOPSIS

Food packaging is the science, art and technology of protecting foods from the adverse effects of environment. Packaging is the final process of food preservation since it can maximize the time from manufacture to consumption.

Polyolefin films find extensive use in packaging especially for food in view of their outstanding properties such as appearance, barrier properties, seal strength, low cost, extended shelf life, process ability and printability. But the synthetic polymers accumulate in the environment due to their slow degradation process.

Hence, in this project an attempt is made to degrade the LDPE with the addition of degradable additive. Addition of degradable additives lowers the properties, so to improve the mechanical properties it is blended with HDPE and to improve the barrier property nano clays are added.

Silver nano particles are added to improve the anti microbial property of LDPE.

This thesis comprises of five chapters

Chapter 1 gives a brief description of introduction to packaging, food packaging and its functions, role of plastic in packaging, advantages and disadvantages, nano composites. Objective of the project is highlighted at the end of the chapter.

Chapter 2 deals with the literature survey which contains the work carried out on the degradation of LDPE.

Chapter 3 is divided into two parts namely

Part A deals with materials and equipment's used in this work

Part B deals with the test procedure.

Chapter 4 deals with results and discussion of testing of films.

Chapter 5 highlights the conclusion of the project work.

Future scope and reference are cited at the end of the report.