

## GRG TRUST RESEARCH PROJECT

### TITLE OF THE PROJECT

PI: Dr. Charumathi Pushparaj

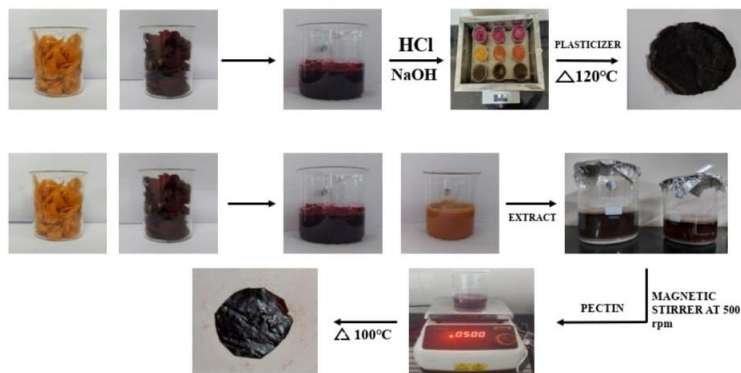
Co PI: NA

Amount Sanctioned: Rs. 1,00,000

Year: 2019-2021

### Project Outcomes:

- The thickness of obtained sheets varied from 1.25 to 1.35 mm and that of the films varied from 0.100 to 0.15mm
- The solubility of the bioplastic sheets produced from both the vegetable waste and fruit waste composites ranged from 40%-45% whereas for the films it was 30% - 40%
- The obtained sheets were hydrophilic in nature with water contact angle for sheets from fruit waste at 68.5° and for vegetable waste 41.6°
- Weight loss of bioplastic film on three phases was observed at 0.83%, 0.429% and 2.762% at temperature variation from 30°C to 300°C. Weight loss was similar in all sheets and films and can be concluded that thermal stability does not affect the natural polymeric substances present in the vegetable peels
- The sheets obtained showed anti-microbial activity against gram +ve and gram –ve
- The hydrophilic angle proves the sheet and film's degradability, which is a novel approach to solid waste management.



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- ❖ Publications: 1 (Scopus Indexed Journal Impact factor-1.47), 2 papers in pipeline
- ❖ Conference/ Seminar/ Workshop: 3
- ❖ Books: Nil
- ❖ Any other achievements: The obtained preliminary results were submitted to SERB POWER grant as a proposal

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