



ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಮಂಡಳಿ

KARNATKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

Indian Institute of Science campus, Bengaluru - 560 012

Telephone: 080 -23341652, 23348848, 23348849, 23348840

Website: www.kscst.iisc.ernet.in/fpp.html or www.kscst.org.in/fpp.html Email: spp@kscst.org.in

**FORMAT FOR PROPOSAL UNDER
"UNDER SCIENCE, TECHNOLOGY AND INNOVATION (STI)
INTERVENTIONS IN THE STATE"**

Section A: Identification

Project Title: "RECOVERY OF PHOSPHORUS FROM THE DOMESTIC WASTEWATER DEWATERED LIQUOR USING LOWCOST MAGNESIUM SOURCE".

Abstract: Due to the finite and non-renewable nature of the phosphate resource, recycling and reuse of nutrients are an environmental and economical motivation that finally leads to water reuse. In recent times, phosphorus recovery is attempted to utilize waste materials. Hence, the recovery of phosphorus from the dewatered liquor using low cost magnesium source, with struvite crystallization technology, which is one of the most widely recommended technology for the recovery of phosphorus. The sludge dewaterability will be achieved with varying dosages of agricultural waste as a skeleton material. The removal of moisture content from the sludge will be studied at various dosage. An initial characteristic of dewatered liquor and low cost magnesium source will be examined. Lab tests will be carried out with varied pH and Mg/P molar ratios to identify the suitable conditions for maximal phosphorus recovery. SEM, EDX, and XRD will be carried out to confirm the formation of struvite. Optimization using the Box-Behnken Design (BBD) will be carried out with various operational parameters for the maximum efficiency in phosphorus recovery Findings can be low cost magnesium source which can recover maximum phosphorus as struvite.

Keywords: Non-renewable, dewatered liquor, molar ratio, seawater, struvite.

Total cost of the project: 5,60,000/-

Duration of the Project: 2.6 months *Year*

1. Faculty-1 Details:

Note: It is mandatory that the project guide shall be the PI of the Project under Faculty Project Program.

- 1.1. Name: Dr Rashmi H R
- 1.2. Department: Civil Engineering
- 1.3. Designation: Associate Professor
- 1.4. Institution Name: KSSEM, Bangalore
- 1.5. Address: Department of Civil Engineering, KSSEM, Bangalore
- 1.6. Contact: 9743266764
Email: rashmih@kssem.edu.in
Mobile No.:9743266764
- 1.7. Gender: Female
- 1.8. List of projects applied and sanctioned: NIL