CSIR-CENTRAL GLASS & CERAMIC RESEARCH DIVISION
BUSINESS DEVELOPMENT & PUBLICATION DIVISION

i. Name of Technology: Jute waste derived zinc micro-fertilizer

ii. Details of technology

Abstract: Zinc inadequacy is a widespread problem for rice /other cultivation in India. Conventional chemical method for microfertilizer often leads to significant loss, require frequent applications, sometimes affects plant health and can cause zinc toxicity symptoms as well as environmental hazards. The reasonable applications of chemical microfertilizers to achieve the highest yield is a challenge. Biographene based zinc microfertilizer made from jute industry waste follows slow release pattern to the soil and is suitable for plant uptake. It improves soil health by means of increased water holding capacity, cation exchange capacity, microbial flora, nutrient retention and reduced agricultural runoff. Thus, the developed microfertiliser enhances plant growth, physiological parameters, crop yields and grain quality.

Deliverables: Waste derived biographene based zinc microfertilizer

iii. Year of Development: 2025

iv. TRL: TRL 5 (10 kg batch) [Lab Testing/Validation of Prototype / Process / field application / improved zinc content in rice]

v. Patenting Status: Patent filed (Application number 202511083620 Dated 02/09/2025) entitled "Process for Management of Waste from Jute Processing Industry as Biographene Based Zinc Micro-Fertilizer for Crops and Soil Health Improvement"

vi. Project under which the technology has been developed: CSIR Waste to Wealth Mission, HCP0054

vii. Whether already licensed: Not Yet

viii. If so, details of licensing: N.A.

ix. Name of the nodal scientist submitting EOI: Dr. Sourja Ghosh, Scientist F, Membrane and Separation Technology Division, CSIR-CGCRI