

## **Progress Report of R&D Projects**

**Project title:** Development of Standards for Use of Jute Geotextiles (JGTs) in Rural Roads

**Duration:** 2 years

**Project start date:** 4<sup>th</sup> April, 2016

**Principal Investigator:** Dr. Mahuya Ghosh

### **Activities carried out so far as on 31st May, 2016**

#### ***Administrative***

1. Purchase of CAPEX items: Following CAPEX items have been already purchased.

- a. Liquid Limit Device,
- b. Light and heavy Proctor Compaction apparatus,
- c. Hydrometers with stirrer,
- d. Electric Oven,
- e. Electronic Balance (220 g capacity, Readability: 0.1 mg)

Purchase orders have been placed for the following equipment which are expected to reach IJIRA latest by 1<sup>st</sup> week of June:

- a) Cyclic loading apparatus with pneumatic actuator along with air drier and air compressor,
- b) Benkelman Beam,
- c) MERLIN apparatus,
- d) Portable skid tester
- e) Laboratory Vane shear apparatus.

2. Junior Research Assistant has been recruited. He has joined on 1<sup>st</sup> June, 2016.

#### ***R&D***

1. Four types of soils have tested for following properties, viz.,

- i) Liquid Limit,
- ii) Plastic Limit,
- iii) Maximum Moisture Density,
- iv) Optimum Moisture Content
- v) California Bearing Ratio (unsoaked)

2. Fabric Engineering :

- i) Visited Gloster Ltd. and provided concept on preparation of leno- based jute woven grid on shuttle-less loom. Provided construction of the grid-fabric and yarn details (Count, Quality ratio, strength, etc.). The fabric will be manufactured soon.
- ii) Two types of blended jute fabric have prepared. Testing of fabric properties are currently underway.

3. Experimental plan has been chalked out as per discussion with the Project Advisor.

***Work plan up to 31<sup>st</sup> August 2016***

- 1. Preparation of Inception Report-Target date: 30<sup>th</sup> June 2016.
- 2. Procurement of different types of soils from different parts of India and their characterization (i.e. testing of soil properties) – Target date: 15<sup>th</sup> July 2016.
- 3. Procurement of remaining soil testing apparatus and raw materials for pavement model tanks –Target date: 20<sup>th</sup> July 2016.
- 4. Fabrication of fifty pavement (approx.) model tanks as per experimental plan –Target date: 31<sup>st</sup> August, 2016.
- 5. Preparation of control pavement models (without geotextile)-Target date: 25<sup>th</sup> July 2016.
- 6. Static and cyclic loading tests for control pavement models – Target date: 31st August 2016.
- 7. Further modification and testing of blended jute geotextiles –Target date: 14th August, 2016.