

### **Details of the equipment/Instrument procured through project**

#### **Process development for the concomitant production of Bioemulsifier,Lipid, Biodiesel, Glycerol and biomass as animal/fish feed using industrial waste in a renewable yeast feedstock based Biorefinery Model**

1. Bioreactor 14 L (Eppendorf, Bioflo 415 Fermentor)
2. Lipid Extractor (J.P. SELECTA, DET. GRAS N 4002842)
3. Fabricated Packed Bed and Continuous Stirred Tank Reactor+ Accessories for biodiesel production (KC Engineers)
4. Cell disruption system and accessories
5. Gradient pump for preparative RP HPLC (Agilent Technologies, spare 1260 pump with mixer)

#### **Biodiesel Production using indigenous microalgae of North-East India”, File No.: BT/PR17193/NER/95/474/2015, Date of Sanction: 13-02-2017, PI: Dr. Ramkrishna Sen, Professor, Department of Bioscience and Biotechnology, Indian Institute of Technology, Kharagpur**

1. Motherboard for existing Gas Chromatography (Make: Thermo scientific; 800 Plus)
2. Spares and accessories for raceway existing Reactor System
3. CO<sub>2</sub> capture-cum precipitation integrated air/flue-gas/Co system with regulated supply unit for photobioreactors along with a continuous biomass separator for an algal biomass cultivation system.

#### **Strategic Enhancement of Microalgal Biomass Production in High Rate Algal Pond Integrated with Bubble Column that is Sourced with Flue-gas Co<sub>2</sub> (IMPRINT-2), SERB/F/11440/2018-2019 & IMP/2018/002135, Dt. 21-02-2019**

1. Sonicator 150W-
2. Pilot-Scale High Rate Algal Pond (2000L)-
3. Ultrasonic Cleaner Type Microclean-103 SPL-
4. Bubble Column Reactor (200L)-
5. Ancillary Equipment and Accessories for Existing SITU flue Gas Generator System Suction and Storage -
6. SAP Filter: High Speed Tubular Bowl Continuous Centrifuge-
7. Freeze Dryer/Lyophilizer-
8. Water Chiller for Fermenter-
9. Dell Precision T360 8<sup>th</sup> Generation Intel core i7-

**Sustainable Resource Recovery through Optimal Treatment and use of Petroleum Industry Wastewater in Algal-bacterial Biorefinery Model**

1. Table-/Bench-top Biomass Pyrolyzer (Nanoteclab Pvt. Ltd.)
2. High-pressure reactor set up (Amar Equipments Pvt. Ltd.)

**Strategic Planning for Water Resources and Implementation of Novel Biotechnical Treatment Solutions and Good Practices**

1. Bioreactor (3.7L, Biojenik India)