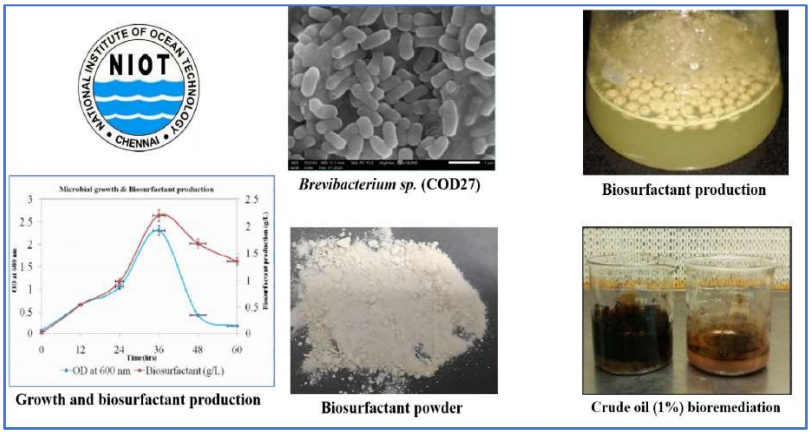
BIOSURFACTANT FROM MARINE BACTERIA FOR WASTE MANAGEMENT

Surfactants are synthetic chemicals used to separate/remove oil by emulsification process. Biosurfactants produced by microbes are amphipilic compounds possess both hydrophobic and hydrophilic moieties that decrease the surface and interfacial tension. The application of biosurfactants can enhance the processes of bioremediation by means of emulsification, solubilization and mobilization.

1. Microbial strain: Biosurfactant producing bacteria *Brevibacterium* sp. COD27 isolated from the deep-sea sediment.
2. Optimized culture conditions (pH, temperature and salinity) maintained for high growth and biomass yields.
3. Optimized production medium (Carbon, Phosphate and Nitrogen source) in specific proportion to enhance the production rate of biosurfactant.



4. Working range: The biosurfactant is highly stable and work efficiently in wide range of physicochemical conditions.

   Temperature 0-120°C; Salinity 0-10%; pH 0-14; Pressure 0-10 MPa.
5. *Brevibacterium* sp. COD27 novel non-GMO strain produce biosurfactant 2.2 g/l in a period of 36 hrs.
6. **Storage:** High barrier plastic bags filled under vacuum condition.
7. **Shelf life:** Retain activity up to 14 months at 4^{O} C
8. They find wide application in industrial, agricultural, food and pharmaceutical industry.
9. **Efficiency:** It works efficiently at a low concentration of 0.1% and degrade 87% of crude oil in period of 30 days. Biodegrade wide range of aromatic compounds and mineralize the toxic compounds into nontoxic form.
10. **Safety:** The product is nontoxic, biodegradable and environmentally friendly and stable compounds.

This technology is developed by **National Institute of Ocean Technology**, Ministry of Earth Sciences, Govt. of India and seeks to stimulate the use of technology by commercialization under Make in India Initiative and **National Research Development Corporation** will facilitate for smooth transfer and licensing of the technology with affordable Licencing terms and conditions.

Any company or organization interested in the technical know-how and to get more details about the technology please refer the contact details below.

Contact Details:

Dr. Tata Sudhakar
Scientist – G & Head
NATIONAL INSTITUTE OF OCEAN TECHNOLOGY
Velacherry-Tambaram Main Road, Narayanapuram,
Pallikaranai, Chennai - 600 100, Tamil Nadu, INDIA.
Email: tata@niot.res.in; Mobile: 9444399844 Phone: 044 - 66783525