Chemo Autotrophic Activated Carbon (CAACO) technology for wastewater treatment

**Problem in using conventional technologies:** Generation of high amount of sludge

**Technology/Solution:** CAACO treat can treat wastewater discharged from industrial and domestic sectors with minimum generation of sludge. It can be applied to COD < 1000 mg/L. It requires low foot print requirement, low electrical energy consumption and no odour emission.

**S&T details:** Chemoautotrophic Activated Carbon Oxidation Reactor (CAACO) is Bacillus sp. immobilized mesoporous carbon packed bed reactor. The air required for the oxidation of organics in wastewater is provided through packed bed reactor at three levels through perforated pipelines. The air required for the oxidation of organics is decided based on the COD load in the wastewater. The pressure of air is decided on the head loss that would encounter during the oxidation of organics in wastewater.

**Commercialized/Launched in market:** Implemented in leather, textile, pharmaceutical and chemical industries. Maximum volume of wastewater treated through this technology was 2000 m$^3$/day.

**Beneficiaries:** Sri Chamundi Leather, Kolappakkam, Chennai; M/s Shameel Tanners, Warangal, Andhra Pradesh; M/s Shuttle Weaves, Karur, Tamilnadu; M/s Jayamurugan Sago industry, Attur, Salem District, Tamilnadu; M/s Celebrity Fashion, Chennai; M/s India Dyeing, Erode, Tamil Nadu; M/s Orchid chemicals & Pharmaceuticals, Sholinganallur, Chennai; M/s Shival oils, Ranipet; M/s United Bleachers, Mettuplalayam; M/s Stallion Garments, Tiruppur; M/s Danube Fashion, Mumbai; M/s Dewan Breweries Ltd, Jaipur

CAACO based treatment plant (750 m$^3$/day) in a textile industry, Chennai
CAACO based treatment plant (50 m³/day) in a software park, Bangalore, at the basement

CAACO based treatment plant (120 m³/day) in a residential complex, Chennai

CAACO based ETP for R&D unit in M/s. Orchid Chemicals and Pharmaceuticals Ltd (50m³/day)