

Fuels and Emission Research

IndianOil R&D gives utmost importance to enhancing the quality of fuels by incorporating state-of-the-art additives to improve engine performance and protect the environment. Novel chemistry patented additives are being developed to provide a cutting edge to the in-house developed multifunctional additive packages in terms of their quality and cost effectiveness. Recently, new patented process technologies have been developed to improve quality of existing fuels and next generation alternative fuels.

Recent Products for enhancing Fuel quality:

- Lubricity improver for Ultra Low Sulphur Diesel LID
- Diesel multifunctional additives-SERVO DMFA, SERVO DMFA(ME)
- Gasoline multifunctional additive
- Antioxidants for gasoline technology-SERVO AO
- Diesel stabilisers-SERVO DS
- Naphtha lubricity additive for gas turbines-SERVO NLI
- Kerosene Marker System

Process Technologies developed:

- Novel Synthetic process for bio-diesel production from vegetable oils
- De-gumming / de-metallation of vegetable oil for second generation bio-fuels production
- Production of dioxane free benzene
- Production of high quality MTO from imported high sulphur crudes

MAJOR FACILITIES:

- All types of synthetic reaction facilities
- Pilot plants for scale-up studies
- Complete testing of Fuels, Bio-fuels & Specialty Chemicals
- Evaluation of Bio-fuels for aviation application
- CO2 mitigation through chemical routes
- Development of Pyrolysis process to get transportation fuels from biomass
- Optimization / modification of refinery processes for desired fuel quality
- LCA studies
- Intake valve deposit screening test rig for gasoline multifunctional additives

Emission Research:

Major impetus is given to develop sustainable fuels and exhaust after treatment devices (ATDs) for a cleaner environment. Lubricants suitable for alternative fuels are assessed for their efficacy. This provides the platform for future-ready alternatives and their compatible lubricants.

Collaborative studies with OEMs and various agencies on vehicles under extreme conditions and conducting emission tests as per European and Indian driving cycles have enabled introduction of newly developed fuel additives and ATDs.

MAJOR FACILITIES:

- CFR units for the evaluation of RON / MON/ Cetane number of fuels.

- MBM 111 engine test bench for the evaluation of IVD cleanliness of MFAs
- Mass emission test facilities for the measurement of engine exhaust emissions
- Mileage Accumulation Chassis Dynamometers
- All-Weather chassis dynamometer capable of testing different range of vehicles starting from small passenger cars to Light Commercial Vehicles with Mass Emission Test Facility
- Two/Three Wheeler chassis dynamometer with Mass Emission Test Facility for regulated and non regulated emissions
- H-CNG Dispensing Station
- H-CNG engine test facility with transient engine dynamometer and emission measurement system
- On-Board Emission Measurement System