Theme 12: Energy, Ecology and Environment, Environmental Education

T12_Oral_04

JATROPHA BIO-FUEL - AN ALTERNATE ENERGY FOR ENVIRONMENT

S.Prabhakar[1*], V.N.Banugopan[2], K.Annamalai[3], S.Jayaraj[4].

[1*, 2] Research scholar, Dept of Automobile Engg, MIT Campus, Anna University, Chennai

[3] Assistant Professor, Dept of Automobile Engg, MIT Campus, Anna University, Chennai

[4] Associate Professor, Dept of Automobile Engg, MIT Campus, Anna University, Chennai

[1*] Email Id: ruggers955@yahoo.co.in

Biodiesel is described as a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats. It is oxygenated, essentially sulfur-free and biodegradable .The use of non-edible oils compared to edible oils is very significant because of the increase in demand for edible oils as food and they are too expensive as compared with diesel fuel.

Methyl esters of Jatropha (MEJ) are one of the best alternative fuels for diesel engine. In this project combustion, performance and emission characteristics of blends of methyl esters of Jatropha will be studied by varying the injection pressure and injection timing using direct injected constant speed diesel engine.

Performance characteristics such as brake thermal efficiency and brake specific fuel consumption at various loads will be calculated by varying injection pressure and injection timing. Emission characteristics such as NOx, CO, CO2 and HC at various loads will be calculated by varying injection pressure and injection timing. Various blends of methyl esters of Jatropha are b20, b40, b60, b80, b100 and the results will be compared with diesel. Injection pressure will be from 200 to 250 bar .i.e.) 180 bar, 195 bar, 210 psi. Injection timing will be 33° btdc, 30° btdc, and 27° btdc.