

COMPLEMENT TIMING OF INJECTION ON DIESEL ENGINE FUELED WITH TAMARIND BIO-DIESEL

P. V. K. Murthy¹ M. V. S. Murali Krishna² & P. Sekhar Babu³

 ¹Professor, Annamacharya Institute of Technology and Sciences, Pigilipur, Batasingaram, Hyderabad, India
² Professor, Department of Mechanical Engineering, Chaitanya Bharathi Institute of Technology, Gandipet, Hyderabad, India

³ Professor, Department of Mechanical Engineering, Narshimha Reddy Engineering College, Maisammaguda, Medchal-Malkajigiri, India

ABSTRACT

There is lot of demand for alternative fuels as fossil fuels are expending day by day. Oils from seeds of plants are acceptable for diesel fuel, as there is no necessary for swapping engine model. But snag related to oils from seeds of plants like glutinous consistency and low flammable characteristics led to change of oils from seeds of the plant into biodiesel by the process known as esterification. However, biodiesel has moderate viscosity which calls for low heat rejection (LHR) engine, with air gap piston, air gap liner and ceramic coated cylinder head with the layer of coating 0.3 mm. Workability parameters were identified with LHR engine and correlated to normal engine, with tamarind biodiesel by differing timing of injection and opening pressure of injection. BTE hiked by 7 %, while at full lad operation- soot particle density got down by 38 % relatively with LHR engine with biodiesel at 30°bTDC with respect to normal engine operated by diesel at 27°bTDC and a pressure of injection of 190 bars.

KEYWORDS: Diesel Fuel, Ceramic Coated Cylinder, Low Heat Rejection

Article History

Received: 27 Jul 2021 | Revised: 29 Jul 2021 | Accepted: 09 Aug 2021