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Analysis of Economics and Value Addition of Optimized Blend with Petrodiesel of Nanocomposite Oil Methyl Esters

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Abstract : The present work considers the importance of economic feasibility and financial viability of biodiesel production, and its use in the present context of prevailing Indian scenario. For this, costs involved in production of one litre of biodiesel from non-edible Jatropha and Pongamia oils Nano mix are considered. Biodiesel derived from the mix is blended with petrodiesel in various proportions and used in Compression Ignition (CI) Direct Injection (DI) engine. Performance and Emission characteristics were investigated. Optimization of the blends considering experimental results was carried out. To validate the experimental results and optimization, Multi-Functional Criteria Technique (MFCT) is used. Further, value additions in terms of INR due to increase in performance and reduction in emissions are investigated. Cost component of subsidy on petrodiesel is taken into consideration in the calculation of cost of one litre of it. Comparison of costs is with respect to the unit of power generated per litre of COME and petrodiesel. By the analysis it has been concluded that the amount saved with subsidy is INR 1.45 Lakh Crores per year and it is INR1.60 Lakh Crores per year without subsidy for petrodiesel.

Keywords : cap value addition, economic analysis, MFCT, NACOME, subsidy
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