







- [4] A.S.Ramadhass, S.Jayaraj and C.Muraleedharan, (2006), "Power generation using coir-pith and wood derived producer gas in diesel engines" *Fuel Processing Technology*, Vol.87, pp.849-853.  
<http://dx.doi.org/10.1016/j.fuproc.2005.06.003>
- [5] Indraj Singh, Hemant kumar and Rakesh Kumar, (2007), "An approach of replacing conventional fuel by different biomass fuels using downdraft gasifier", *National conference on recent advances in design, dynamic and manufacturing*, 16-17 March 2007, pp.397-401.
- [6] Kalbande S.R, More G.R, Nadre R.G, (2008), *Biodiesel Production from Non edible oils of jatropha and Karanj for utilization in Electrical Generator*, *Bioenergy Springer science* pp-170-178.
- [7] Malik Ashish , Singh Lakhwinder, Singh Indraj (2009) *Utilization of Biomass as Engine Fuels*, *Journal of Scientific & Industrial Research* Volume 68, pp 887-890.
- [8] Singh Indraj (2010), *Investigation of Fuel Properties of Biodiesel and its Blends by Adding Additive*, paper presented in "Symposium on fuels and Lubricants" Organized by Indian Oil Research & Development Centre at India Habitat Centre, New Delhi, 2010.
- [9] Singh Indraj, (2010) *Performance Analysis of CI Engine by using different Biodiesel fuels*, presented in "New Frontiers in Biofuels" Organized by Delhi Technical University at India Habitat Centre, New Delhi, 2010.
- [10] X. Xin, D.X. Liu, L.Q. Wang, L. Wang, (2011), *Influence of variable swirl intake manifolds for DI diesel engine on in-cylinder air motion*, *Appl Mech Mater*, 130 pp. 95–98.  
<http://dx.doi.org/10.4028/www.scientific.net/AMM.130-134.95>
- [11] A.E. Atabani, A.S. Silitonga, I.A. Badruddin, T.M.I. Mahlia, H.H. Masjuki, S. Mekhilef A comprehensive review on biodiesel as an alternative energy resource and its characteristics, *Renew Sust Energy Rev*, 16 pp. 2070–2093, (2012).  
<http://dx.doi.org/10.1016/j.rser.2012.01.003>
- [12] A.K. Hossain, P.A. Davies. (2012), *Performance, emission and combustion characteristics of an indirect injection (IDI) multi-cylinder compression ignition (CI) engine operating on neat jatropha and Karanja oils preheated by jacket water*. *Biomass Bioenergy*, 46 pp. 332–342.  
<http://dx.doi.org/10.1016/j.biombioe.2012.08.007>
- [13] I.M. Rizwanul Fattah, H.H. Masjuki, A.M. Liaquat, R. Ramli, M.A. Kalam, V.N. Riazuddin, *Impact of various biodiesel fuels obtained from edible and non-edible oils on engine exhaust gas and noise emissions*, *Renew Sust Energy Rev*, 18 (2013), pp. 552–567.  
<http://dx.doi.org/10.1016/j.rser.2012.10.036>
- [14] I. Saad, S.Bari, (2013) *Effect by guide vane swirl and tumble device to improve the air-fuel mixing of diesel engine running with higher viscous fuels*, *International mechanical engineering congress & exposition, ASME 2013*.



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