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- [1] R. Costanza, M. Hart, S. Posner, and J. Talberth, “Beyond GDP : The Need for New Measures of Progress Beyond GDP : The Need for New Measures of Progress,” *Bost. Univ.*, no. 4, pp. 1–47, 2009.
- [2] “Global Energy Review 2019,” *Glob. Energy Rev. 2019*, 2020, doi: 10.1787/90c8c125-en.
- [3] B.P. Statistical Review, “bp Statistical Review of World Energy globally consistent data on world energy markets . The review is one of the most widely respected The Statistical of publications World Energy analyses and Review energy used from by the prior The Review academia , ha,” *Rep. Stat. Rev. World Energy Glob. consistent data world energy Mark.*, p. 60, 2022.
- [4] U. Energy Information Administration, “IEO 2021 Narrative.”
- [5] Petroleum Planning & Analysis Cell, “Petroleum Planning & Analysis Cell,” vol. 2022, no. August, pp. 1–11, 2020, [Online]. Available: www.ppac.gov.in
- [6] K. P. Mentor, “Indian Petroleum & natural gas statistics”.
- [7] S. Arora and G. J. Fernandez, “Importing Crude Oil for Indian Refineries – Future Strategies for Tonnage Requirements,” *SSRN Electron. J.*, no. March 2011, 2012, doi: 10.2139/ssrn.1982955.
- [8] NITI Aayog, “Niti aayog report 2014-15,” p. 210, 2015.
- [9] A. Demirbas, “Progress and recent trends in biodiesel fuels,” *Energy Convers. Manag.*, vol. 50, no. 1, pp. 14–34, 2009, doi: 10.1016/j.enconman.2008.09.001.
- [10] M. F. Demirbas and M. Balat, “Recent advances on the production and utilization trends of bio-fuels: A global perspective,” *Energy Convers. Manag.*, vol. 47, no. 15–16, pp. 2371–2381, 2006, doi: 10.1016/j.enconman.2005.11.014.
- [11] I. E. Agency, “Renewables,” 2021.
- [12] D. C. Rakopoulos, “Combustion and emissions of cottonseed oil and its bio-diesel in blends with either n-butanol or diethyl ether in HSDI diesel engine,” *Fuel*, vol. 105, no. 2013, pp. 603–613, 2013, doi: 10.1016/j.fuel.2012.08.023.
- [13] N. K. Patel and S. N. Shah, *Biodiesel from Plant Oils*. Elsevier Inc., 2015. doi:

- 10.1016/B978-0-12-800211-7.00011-9.
- [14] S. Kumar and S. Jain, "A Review on Biodiesel Production," *Pet. Chem. Ind. Int.*, vol. 6, no. 2, 2023, doi: 10.33140/pcii.06.02.11.
- [15] S. Sivalakshmi and T. Balusamy, "Effect of biodiesel and its blends with diethyl ether on the combustion, performance and emissions from a diesel engine," *Fuel*, vol. 106, pp. 106–110, 2013, doi: 10.1016/j.fuel.2012.12.033.
- [16] R. Prakash, R. K. Singh, and S. Murugan, "Experimental investigation on a diesel engine fueled with bio-oil derived from waste wood-biodiesel emulsions," *Energy*, vol. 55, pp. 610–618, 2013, doi: 10.1016/j.energy.2013.03.085.
- [17] L. C. Meher, D. Vidya Sagar, and S. N. Naik, "Technical aspects of biodiesel production by transesterification - A review," *Renew. Sustain. Energy Rev.*, vol. 10, no. 3, pp. 248–268, 2006, doi: 10.1016/j.rser.2004.09.002.
- [18] R. Rosca, E. Rakosi, G. Manolache, and M. Niculaua, "Fuel and injection characteristics for a biodiesel type fuel from waste cooking oil," *SAE Tech. Pap.*, no. 724, 2005, doi: 10.4271/2005-01-3674.
- [19] A. Karmakar, S. Karmakar, and S. Mukherjee, "Biodiesel production from neem towards feedstock diversification: Indian perspective," *Renew. Sustain. Energy Rev.*, vol. 16, no. 1, pp. 1050–1060, 2012, doi: 10.1016/j.rser.2011.10.001.
- [20] A. Murugesan, C. Umarani, R. Subramanian, and N. Nedunchezian, "Bio-diesel as an alternative fuel for diesel engines-A review," *Renew. Sustain. Energy Rev.*, vol. 13, no. 3, pp. 653–662, 2009, doi: 10.1016/j.rser.2007.10.007.
- [21] N. Kumar, Varun, and S. R. Chauhan, "Performance and emission characteristics of biodiesel from different origins: A review," 2013. doi: 10.1016/j.rser.2013.01.006.
- [22] G. of India, "<https://pib.gov.in/PressReleasePage.aspx?PRID=1840096> <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1836313>," 2022.
- [23] I. Sachs, "United Nations Conference on Trade and Development The Biofuels Controversy," *Revue*, no. October, p. 28, 2007, [Online]. Available: www.UNCTAD.org
- [24] M. M. Azam, A. Waris, and N. M. Nahar, "Prospects and potential of fatty acid methyl esters of some non-traditional seed oils for use as biodiesel in India,"

- Biomass and Bioenergy*, vol. 29, no. 4, pp. 293–302, 2005, doi: 10.1016/j.biombioe.2005.05.001.
- [25] N. K. Patel, P. S. Nagar, and S. N. Shah, “Identification of Non-edible Seeds as Potential Feedstock for the Production and Application of Bio-diesel,” *Energy and Power*, vol. 3, no. 4, pp. 67–78, 2013, doi: 10.5923/j.ep.20130304.05.
- [26] P. Appavu, V. Ramanan M, J. Jayaraman, and H. Venu, “NOx emission reduction techniques in biodiesel-fuelled CI engine: a review,” *Aust. J. Mech. Eng.*, vol. 19, no. 2, pp. 210–220, 2021, doi: 10.1080/14484846.2019.1596527.
- [27] “Reşitoğlu2015_Article_ThePollutantEmissionsFromDiese.pdf,” 2015.
- [28] S. K. Hoekman and C. Robbins, “Review of the effects of biodiesel on NOx emissions,” *Fuel Process. Technol.*, vol. 96, pp. 237–249, 2012, doi: 10.1016/j.fuproc.2011.12.036.
- [29] A. F. D. Amaya, A. Gabriel, D. Torres, and D. A. Acosta, “Control of emissions in an internal combustion engine: first approach for sustainable design,” *Int. J. Interact. Des. Manuf.*, 2016, doi: 10.1007/s12008-016-0307-6.
- [30] R. Ranjith Kumar, G. Elavarasan, M. Kannan, and D. Karthikeyan, “Standards for environmental protection in India,” *Int. J. Sci. Technol. Res.*, vol. 9, no. 2, pp. 319–323, 2020.
- [31] A. B. Sounak Roy, “Variation of selectivity with support chemistry in NO(x) removal catalysts,” *Adv. Chem. Ser.*, vol. No. 143, no. x, pp. 32–38, 1975, doi: 10.1021/ba-1975-0143.ch004.
- [32] J. M. Vincent, *Diffuse Lung Disorders — A Comprehensive Clinical-Radiological Overview*, vol. 46, no. 1. 2002. doi: 10.1046/j.1440-1673.2001.01015.x.
- [33] Robert L. Kane and Daniel E. Klein, *Air, Advanced Control, Noise Pollution*. 2001.
- [34] T. Boningari and P. G. Smirniotis, “Impact of nitrogen oxides on the environment and human health: Mn-based materials for the NOx abatement,” *Curr. Opin. Chem. Eng.*, vol. 13, no. x, pp. 133–141, 2016, doi: 10.1016/j.coche.2016.09.004.
- [35] S. M. Palash, H. H. Masjuki, M. A. Kalam, B. M. Masum, A. Sanjid, and M. J. Abedin, “State of the art of NOx mitigation technologies and their effect on the performance and emission characteristics of biodiesel-fueled Compression Ignition

- engines,” *Energy Convers. Manag.*, vol. 76, pp. 400–420, 2013, doi: 10.1016/j.enconman.2013.07.059.
- [36] E. G and K. Duraisamy, “Effect of exhaust gas recirculation in the performance and emission characteristics of an oxygenated mustard oil biodiesel in a compression ignition engine,” *Energy Sources, Part A Recover. Util. Environ. Eff.*, vol. 00, no. 00, pp. 1–13, 2020, doi: 10.1080/15567036.2020.1813846.
- [37] S. Prakash, M. Prabhakar, and M. Saravana Kumar, “Experimental analysis of diesel engine behaviours using biodiesel with different exhaust gas recirculation rates,” *Int. J. Ambient Energy*, vol. 0, no. 0, pp. 1–10, 2020, doi: 10.1080/01430750.2020.1712251.
- [38] J. Jeevahan, G. Mageshwaran, G. B. Joseph, R. B. D. Raj, and R. T. Kannan, “Various strategies for reducing Nox emissions of biodiesel fuel used in conventional diesel engines: A review,” *Chem. Eng. Commun.*, vol. 204, no. 10, pp. 1202–1223, 2017, doi: 10.1080/00986445.2017.1353500.
- [39] P. V. Elumalai, M. Nambiraj, M. Parthasarathy, D. Balasubramanian, V. Hariharan, and J. Jayakar, “Experimental investigation to reduce environmental pollutants using biofuel nano-water emulsion in thermal barrier coated engine,” *Fuel*, vol. 285, no. May 2020, p. 119200, 2021, doi: 10.1016/j.fuel.2020.119200.
- [40] E. Perumal Venkatesan *et al.*, “Performance and emission reduction characteristics of cerium oxide nanoparticle-water emulsion biofuel in diesel engine with modified coated piston,” *Environ. Sci. Pollut. Res.*, vol. 26, no. 26, pp. 27362–27371, 2019, doi: 10.1007/s11356-019-05773-z.
- [41] P. V. E. M. Parthasarathy, V. H. J. Jayakar, and S. M. Iqbal, “Evaluation of water emulsion in biodiesel for engine performance and emission characteristics,” *J. Therm. Anal. Calorim.*, 2021, doi: 10.1007/s10973-021-10825-z.
- [42] J. W. Park, K. Y. Huh, and K. H. Park, “Experimental study on the combustion characteristics of emulsified diesel in a rapid compression and expansion machine,” *Proc. Inst. Mech. Eng. Part D J. Automob. Eng.*, vol. 214, no. 5, pp. 579–586, 2000, doi: 10.1243/0954407001527862.
- [43] X. Tauzia, A. Maiboom, and S. R. Shah, “Experimental study of inlet manifold water injection on combustion and emissions of an automotive direct injection Diesel

- engine,” *Energy*, vol. 35, no. 9, pp. 3628–3639, 2010, doi: 10.1016/j.energy.2010.05.007.
- [44] F. Bedford, C. Rutland, P. Dittrich, A. Raab, and F. Wirbeleit, “Effects of direct water injection on di diesel engine combustion,” *SAE Tech. Pap.*, 2000, doi: 10.4271/2000-01-2938.
- [45] S. Daud, M. A. Hamidi, and R. Mamat, “A review of fuel additives’ effects and predictions on internal combustion engine performance and emissions,” *AIMS Energy*, vol. 10, no. 1, pp. 1–22, 2022, doi: 10.3934/ENERGY.2022001.
- [46] S. Sharma, N. Kumar, S. Jain, and S. Kumar, “Scope of Fe-ZSM5 zeolite based urea-SCR with fish oil bio-diesel fuel in compressed ignition engine,” *SAE Tech. Pap.*, vol. 1, 2014, doi: 10.4271/2014-01-1541.
- [47] EPRI, “SNCR Guidelines Update,” *1004727*, 2004.
- [48] V. M. Zamansky, V. V. Lissianski, P. M. Maly, L. Ho, D. Rusli, and W. C. Gardiner, “Reactions of sodium species in the promoted SNCR process,” *Combust. Flame*, vol. 117, no. 4, pp. 821–831, 1999, doi: 10.1016/S0010-2180(98)00127-8.
- [49] EPA, “Nitrogen oxides (NO_x), why and how they are controlled,” *Epa-456/F-99-006R*, no. November, p. 48, 1999, [Online]. Available: <http://www.epa.gov/ttnca1/dir1/fnoxdoc.pdf>
- [50] D. B. Pal, R. Chand, S. N. Upadhyay, and P. K. Mishra, “Performance of water gas shift reaction catalysts: A review,” *Renew. Sustain. Energy Rev.*, vol. 93, no. February 2017, pp. 549–565, 2018, doi: 10.1016/j.rser.2018.05.003.
- [51] N. E. W. Delhi and P. A. R. T. I. S. Ec, “EXTRAORDINARY Hkkx I — [k . M 1 izkf / dkj ls izdkf ’ kr THE GAZETTE OF INDIA : EXTRAORDINARY,” vol. 2019, no. D, pp. 1–23, 2019.
- [52] D. Kawano, H. Ishii, Y. Goto, A. Noda, and Y. Aoyagi, “Effect of Exhaust Gas Recirculation on Exhaust Emissions from Diesel Engines Fuelled with Biodiesel,” *SAE Tech. Pap.*, vol. 2007-Septe, 2007, doi: 10.4271/2007-24-0128.
- [53] Ö. Can, E. Öztürk, H. Solmaz, F. Aksoy, C. Çınar, and H. S. Yücesu, “Combined effects of soybean biodiesel fuel addition and EGR application on the combustion and exhaust emissions in a diesel engine,” *Appl. Therm. Eng.*, vol. 95, no. x, pp. 115–124, 2016, doi: 10.1016/j.applthermaleng.2015.11.056.

- [54] M. H. M. Yasin, R. Mamat, A. F. Yusop, P. Paruka, T. Yusaf, and G. Najafi, "Effects of Exhaust Gas Recirculation (EGR) on a Diesel Engine fuelled with Palm-biodiesel," *Energy Procedia*, vol. 75, pp. 30–36, 2015, doi: 10.1016/j.egypro.2015.07.131.
- [55] M. Gomaa, A. J. Alimin, and K. A. Kamarudin, "The effect of EGR rates on NOX and smoke emissions of an IDI diesel engine fuelled with Jatropha biodiesel blends," *Int. J. Energy Environ.*, vol. 2, no. 3, pp. 477–490, 2011.
- [56] M. Mani, G. Nagarajan, and S. Sampath, "An experimental investigation on a di diesel engine using waste plastic oil with exhaust gas recirculation," *Fuel*, vol. 89, no. 8, pp. 1826–1832, 2010, doi: 10.1016/j.fuel.2009.11.009.
- [57] A. Paykani, A. Akbarzadeh, and M. T. Shervani Tabar, "Experimental Investigation of the Effect of Exhaust Gas Recirculation on Performance and Emissions Characteristics of a Diesel Engine Fueled with Biodiesel," *Int. J. Eng. Technol.*, vol. 3, no. 3, pp. 239–243, 2011, doi: 10.7763/ijet.2011.v3.231.
- [58] K. Venkateswarlu, K. V. Kumar, B. S. R. Murthy, and V. V. Subbarao, "Effect of exhaust gas recirculation and ethyl hexyl nitrate additive on biodiesel fuelled diesel engine for the reduction of NO x emissions," *Front. Energy*, vol. 6, no. 3, pp. 304–310, 2012, doi: 10.1007/s11708-012-0195-9.
- [59] V. Manieniyam and S. Sivaprakasam, "Experimental Analysis of Exhaust Gas Recirculation on DI Diesel Engine Operating with Biodiesel," *Int. J. Eng. Technol.*, vol. 3, no. 2, pp. 129–135, 2013.
- [60] R. L. Muncrief, C. W. Rooks, M. Cruz, and M. P. Harold, "Combining biodiesel and exhaust gas recirculation for reduction in NOx and particulate emissions," *Energy and Fuels*, vol. 22, no. 2, pp. 1285–1296, 2008, doi: 10.1021/ef700465p.
- [61] J. Jeevahan, M. Chandrasekaran, G. Mageshwaran, G. Britto Joseph, and S. Staline, "Investigation of engine performance and emissions of B20 biodiesel blend and effect of EGR on NOx emissions reduction," *J. Chem. Pharm. Sci.*, vol. 9, no. 4, pp. 2469–2473, 2016.
- [62] S. S. Gill, D. Turner, A. Tsolakis, and A. P. E. York, "Controlling soot formation with filtered EGR for diesel and biodiesel fuelled engines," *Environ. Sci. Technol.*, vol. 46, no. 7, pp. 4215–4222, 2012, doi: 10.1021/es203941n.

- [63] S. Vellaiyan, A. Subbiah, and P. Chockalingam, “Combustion, performance, and emission analysis of diesel engine fueled with water-biodiesel emulsion fuel and nanoadditive,” *Environ. Sci. Pollut. Res.*, vol. 25, no. 33, pp. 33478–33489, 2018, doi: 10.1007/s11356-018-3216-3.
- [64] O. A. Elsanusi, M. M. Roy, and M. S. Sidhu, “Experimental Investigation on a Diesel Engine Fueled by Diesel-Biodiesel Blends and their Emulsions at Various Engine Operating Conditions,” *Appl. Energy*, vol. 203, pp. 582–593, 2017, doi: 10.1016/j.apenergy.2017.06.052.
- [65] E. Jiaqiang *et al.*, “Performance and emission evaluation of a marine diesel engine fueled by water biodiesel-diesel emulsion blends with a fuel additive of a cerium oxide nanoparticle,” *Energy Convers. Manag.*, vol. 169, no. March, pp. 194–205, 2018, doi: 10.1016/j.enconman.2018.05.073.
- [66] P. Dinesha, S. Kumar, and M. A. Rosen, “Combined effects of water emulsion and diethyl ether additive on combustion performance and emissions of a compression ignition engine using biodiesel blends,” *Energy*, vol. 179, pp. 928–937, 2019, doi: 10.1016/j.energy.2019.05.071.
- [67] Z. A. A. Karim, M. Y. Khan, A. Rashid, A. Aziz, and F. Y. Hagos, “PLATFORM-A Journal of Engineering ATTAINING SIMULTANEOUS REDUCTION IN NOX AND SMOKE BY USING WATER-IN-BIODIESEL EMULSION FUELS FOR DIESEL ENGINE,” *Platf. - A J. Eng.*, vol. 3, no. 2, p. 26369877, 2019.
- [68] A. Khanjani and M. A. Sobati, “Performance and emission of a diesel engine using different water/waste fish oil (WFO) biodiesel/diesel emulsion fuels: Optimization of fuel formulation via response surface methodology (RSM),” *Fuel*, vol. 288, no. November 2020, p. 119662, 2021, doi: 10.1016/j.fuel.2020.119662.
- [69] I. Journal *et al.*, “an Experimental Investigation on Performance , Combustion and Emission Parameters Biodiesel-Water Emulsion on a Di Diesel,” vol. 5, no. x, pp. 54–62, 2016.
- [70] V. Ayhan, “Investigation of electronic controlled direct water injection for performance and emissions of a diesel engine running on sunflower oil methyl ester,” *Fuel*, vol. 275, no. April, p. 117992, 2020, doi: 10.1016/j.fuel.2020.117992.
- [71] I. Cesur, “Investigation of the effects of steam injection on the emissions and

- performance of a diesel engine using waste chicken oil methyl ester,” *J. Mech. Sci. Technol.*, vol. 30, no. 10, pp. 4773–4779, 2016, doi: 10.1007/s12206-016-0949-0.
- [72] A. Parlak, “A study on performance and exhaust emissions of the steam injected DI diesel engine running with different diesel- conola oil methyl ester blends,” *J. Energy Inst.*, vol. 92, no. 3, pp. 717–729, 2019, doi: 10.1016/j.joei.2018.03.001.
- [73] M. Farag, H. Kosaka, M. Bady, and A. K. Abdel-Rahman, “Effects of intake and exhaust manifold water injection on combustion and emission characteristics of a DI diesel engine,” *J. Therm. Sci. Technol.*, vol. 12, no. 1, pp. 1–15, 2017, doi: 10.1299/jtst.2017jtst0014.
- [74] B. Tesfa, R. Mishra, F. Gu, and A. D. Ball, “Water injection effects on the performance and emission characteristics of a CI engine operating with biodiesel,” *Renew. Energy*, vol. 37, no. 1, pp. 333–344, 2012, doi: 10.1016/j.renene.2011.06.035.
- [75] C. J. Chadwell and P. J. G. Dingle, “Effect of diesel and water co-injection with real-time control on diesel engine performance and emissions,” *SAE Tech. Pap.*, vol. 2008, no. 724, 2008, doi: 10.4271/2008-01-1190.
- [76] K. A. Subramanian, “A comparison of water-diesel emulsion and timed injection of water into the intake manifold of a diesel engine for simultaneous control of NO and smoke emissions,” *Energy Convers. Manag.*, vol. 52, no. 2, pp. 849–857, 2011, doi: 10.1016/j.enconman.2010.08.010.
- [77] G. Gonca and B. Sahin, “Effect of turbo charging and steam injection methods on the performance of a Miller cycle diesel engine (MCDE),” *Appl. Therm. Eng.*, vol. 118, pp. 138–146, 2017, doi: 10.1016/j.applthermaleng.2017.02.039.
- [78] G. Gonca, “Investigation of the effects of steam injection on performance and NO emissions of a diesel engine running with ethanol-diesel blend,” *Energy Convers. Manag.*, vol. 77, pp. 450–457, 2014, doi: 10.1016/j.enconman.2013.09.031.
- [79] T. Subramanian, E. G. Varuvel, S. Ganapathy, S. Vedharaj, and R. Vallinayagam, “Role of fuel additives on reduction of NOX emission from a diesel engine powered by camphor oil biofuel,” *Environ. Sci. Pollut. Res.*, vol. 25, no. 16, pp. 15368–15377, 2018, doi: 10.1007/s11356-018-1745-4.
- [80] R. Senthil, G. Pranesh, and R. Silambarasan, “Leaf extract additives: A solution for

- reduction of NO_x emission in a biodiesel operated compression ignition engine,” *Energy*, vol. 175, pp. 862–878, 2019, doi: 10.1016/j.energy.2019.03.039.
- [81] G. R. Kannan, R. Karvembu, and R. Anand, “Effect of metal based additive on performance emission and combustion characteristics of diesel engine fuelled with biodiesel,” *Appl. Energy*, vol. 88, no. 11, pp. 3694–3703, 2011, doi: 10.1016/j.apenergy.2011.04.043.
- [82] D. Ganesh, “825B23Fe2F50D3706C583F71E72778E4.Pdf,” no. x, pp. 3453–3459, 2011.
- [83] A. Keskin, M. Gürü, and D. Altıparmak, “Biodiesel production from tall oil with synthesized Mn and Ni based additives: Effects of the additives on fuel consumption and emissions,” *Fuel*, vol. 86, no. 7–8, pp. 1139–1143, 2007, doi: 10.1016/j.fuel.2006.10.021.
- [84] P. R. Babu, K. P. Rao, and B. V. A. Rao, “The Role of Oxygenated Fuel Additive (DEE) along with Mahuva Methyl Ester to Estimate Performance and Emission analysis of DI-Diesel Engine,” *Int. J. Therm. Technol.*, vol. 2, no. 1, pp. 119–123, 2012, [Online]. Available: <https://inpressco.com/wp-content/uploads/2012/03/Paper1119-123.pdf>
- [85] I. M. Rizwanul Fattah, H. H. Masjuki, M. A. Kalam, M. Mofijur, and M. J. Abedin, “Effect of antioxidant on the performance and emission characteristics of a diesel engine fueled with palm biodiesel blends,” *Energy Convers. Manag.*, vol. 79, pp. 265–272, 2014, doi: 10.1016/j.enconman.2013.12.024.
- [86] G. Balaji and M. Cheralathan, “Experimental investigation to reduce emissions of CI (compression ignition) engine fuelled with methyl ester of cottonseed oil using antioxidant,” *Int. J. Ambient Energy*, vol. 35, no. 1, pp. 13–19, 2014, doi: 10.1080/01430750.2012.759150.
- [87] M. Kowshik Dhev, R. Sheshathri, A. Avinash, and S. Natarajan, “Experimental Study on NO_x Reduction in CI Engine Fuelled with Biodiesel (Cotton Seed Methyl Ester Blends) Using Selective Catalytic Reduction (SCR) System with Anova Analysis,” *Appl. Mech. Mater.*, vol. 787, pp. 712–716, 2015, doi: 10.4028/www.scientific.net/amm.787.712.
- [88] C. Solaimuthu, V. Ganesan, D. Senthilkumar, and K. K. Ramasamy, “Emission

- reductions studies of a biodiesel engine using EGR and SCR for agriculture operations in developing countries,” *Appl. Energy*, vol. 138, pp. 91–98, Jan. 2015, doi: 10.1016/J.APENERGY.2014.04.023.
- [89] H. J. Ren, D. M. Lou, P. Q. Tan, and Z. Y. Hu, “Experimental study on urea dosing strategy for SCR on an engine fuelled with bio-diesel,” *Adv. Mater. Res.*, vol. 848, pp. 286–290, 2014, doi: 10.4028/www.scientific.net/AMR.848.286.
- [90] N. Sundarraaj Senthilkumar; P.M.Madhankumar;Shanmugam, “Urea-Scr in C . I . Engine Fuelled With Diesel and Jatropha Blends,” *Int. J. Innov. Res. Sci. Eng. Technol.*, vol. 3, no. 4, pp. 11387–11396, 2014.
- [91] B. JothiThiruma, E. J. Gunasekaran, and C. G. Saravanan, “Performance and Emission Analysis of Bio Diesel Fuelled Engine with Selective Catalyst Reduction (SCR),” *Int. J. Eng. Technol.*, vol. 3, no. 2, pp. 205–211, 2013.
- [92] K. Masera and A. K. Hossain, “Modified selective non-catalytic reduction system to reduce NO_x gas emission in biodiesel powered engines,” *Fuel*, vol. 298, no. March, p. 120826, 2021, doi: 10.1016/j.fuel.2021.120826.
- [93] S. Thiagarajan, V. E. Geo, L. J. Martin, and B. Nagalingam, “Selective Non-catalytic Reduction (SNCR) of CO₂ and NO Emissions from a Single-Cylinder CI Engine Using Chemical Absorbents,” *Emiss. Control Sci. Technol.*, vol. 3, no. 3, pp. 233–242, 2017, doi: 10.1007/s40825-017-0076-0.
- [94] S. Vedharaj *et al.*, “Reduction of harmful emissions from a diesel engine fueled by kapok methyl ester using combined coating and SNCR technology,” *Energy Convers. Manag.*, vol. 79, pp. 581–589, 2014, doi: 10.1016/j.enconman.2013.12.056.
- [95] M. Zheng, Y. Zhang, and L. Shi, “Research on selective non-catalytic NO_x reduction (SNCR) for diesel engine,” *Int. J. Heat Technol.*, vol. 36, no. 3, pp. 981–986, 2018, doi: 10.18280/ijht.360326.
- [96] Y. Nakanishi, Y. Yoshihara, and K. Nishiwaki, “Non-catalytic reduction of NO in diesel exhaust with the addition of methylamine,” *JSAE Rev.*, vol. 21, no. 4, pp. 561–566, 2000, doi: 10.1016/S0389-4304(00)00079-5.
- [97] S. Niu, K. Han, and C. Lu, “An experimental study on the effect of operating parameters and sodium additive on the NO_xOUT Process,” *Process Saf. Environ.*

- Prot.*, vol. 89, no. 2, pp. 121–126, 2011, doi: 10.1016/j.psep.2011.01.001.
- [98] K. Sivaramakrishnan, “Investigation on performance and emission characteristics of a variable compression multi fuel engine fuelled with Karanja biodiesel–diesel blend,” *Egypt. J. Pet.*, vol. 27, no. 2, pp. 177–186, 2018, doi: 10.1016/j.ejpe.2017.03.001.
- [99] P. Rosha, S. K. Mohapatra, S. K. Mahla, H. M. Cho, B. S. Chauhan, and A. Dhir, “Effect of compression ratio on combustion, performance, and emission characteristics of compression ignition engine fueled with palm (B20)biodiesel blend,” *Energy*, vol. 178, pp. 676–684, 2019, doi: 10.1016/j.energy.2019.04.185.
- [100] J. Kataria, S. K. Mohapatra, and K. Kundu, “Biodiesel production from waste cooking oil using heterogeneous catalysts and its operational characteristics on variable compression ratio CI engine,” *J. Energy Inst.*, vol. 92, no. 2, pp. 275–287, 2019, doi: 10.1016/j.joei.2018.01.008.
- [101] M. Hawi, A. Elwardany, S. Ookawara, and M. Ahmed, “Effect of compression ratio on performance, combustion and emissions characteristics of compression ignition engine fueled with jojoba methyl ester,” *Renew. Energy*, vol. 141, pp. 632–645, 2019, doi: 10.1016/j.renene.2019.04.041.
- [102] Y. Datta Bharadwaz, B. Govinda Rao, V. Dharma Rao, and C. Anusha, “Improvement of biodiesel methanol blends performance in a variable compression ratio engine using response surface methodology,” *Alexandria Eng. J.*, vol. 55, no. 2, pp. 1201–1209, 2016, doi: 10.1016/j.aej.2016.04.006.
- [103] P. Dubey and R. Gupta, “Influences of dual bio-fuel (Jatropha biodiesel and turpentine oil) on single cylinder variable compression ratio diesel engine,” *Renew. Energy*, vol. 115, pp. 1294–1302, 2018, doi: 10.1016/j.renene.2017.09.055.
- [104] M. K. Yesilyurt, “The effects of the fuel injection pressure on the performance and emission characteristics of a diesel engine fuelled with waste cooking oil biodiesel–diesel blends,” *Renew. Energy*, vol. 132, pp. 649–666, 2019, doi: 10.1016/j.renene.2018.08.024.
- [105] S. V. Channapattana, A. A. Pawar, and P. G. Kamble, “Effect of Injection Pressure on the Performance and Emission Characteristics of VCR engine using Honne Biodiesel as a Fuel,” *Mater. Today Proc.*, vol. 2, no. 4–5, pp. 1316–1325, 2015, doi:

10.1016/j.matpr.2015.07.049.

- [106] P. Shrivastava and T. N. Verma, “Effect of fuel injection pressure on the characteristics of CI engine fuelled with biodiesel from Roselle oil,” *Fuel*, vol. 265, no. December 2019, p. 117005, 2020, doi: 10.1016/j.fuel.2019.117005.
- [107] G. R. Kannan and R. Anand, “Effect of injection pressure and injection timing on DI diesel engine fuelled with biodiesel from waste cooking oil,” *Biomass and Bioenergy*, vol. 46, pp. 343–352, 2012, doi: 10.1016/j.biombioe.2012.08.006.
- [108] N. R. Banapurmath, P. G. Tewari, and R. S. Hosmath, “Effect of biodiesel derived from Honge oil and its blends with diesel when directly injected at different injection pressures and injection timings in single-cylinder water-cooled compression ignition engine,” *Proc. Inst. Mech. Eng. Part A J. Power Energy*, vol. 223, no. 1, pp. 31–40, 2009, doi: 10.1243/09576509JPE673.
- [109] S. Jaichandar and K. Annamalai, “Combined impact of injection pressure and combustion chamber geometry on the performance of a biodiesel fueled diesel engine,” *Energy*, vol. 55, pp. 330–339, 2013, doi: 10.1016/j.energy.2013.04.019.
- [110] N. York and B. Garden, “Chemurgy of Sapotaceous Plants : Madhuca Species of India Author (s): Y . C . Awasthi , S . C . Bhatnagar and C . R . Mitra Published by : Springer on behalf of New York Botanical Garden Press Stable URL : <http://www.jstor.org/stable/4253654> Chemurgy of,” vol. 29, no. 4, pp. 380–389, 2018.
- [111] M. Vijay Kumar, A. Veeresh Babu, and P. Ravi Kumar, “Experimental investigation on the effects of diesel and mahua biodiesel blended fuel in direct injection diesel engine modified by nozzle orifice diameters,” *Renew. Energy*, vol. 119, pp. 388–399, 2018, doi: 10.1016/j.renene.2017.12.007.
- [112] S. V. Ghadge and H. Raheman, “Biodiesel production from mahua (*Madhuca indica*) oil having high free fatty acids,” *Biomass and Bioenergy*, vol. 28, no. 6, pp. 601–605, 2005, doi: 10.1016/j.biombioe.2004.11.009.
- [113] Y. K. Bansal and T. Chibbar, “Micropropagation of *Madhuca latifolia* Macb. through nodal culture,” *Plant Biotechnol.*, vol. 17, no. 1, pp. 17–20, 2000, doi: 10.5511/plantbiotechnology.17.17.
- [114] S. Živković and M. Veljković, “Environmental impacts the of production and use of

- biodiesel,” *Environ. Sci. Pollut. Res.*, vol. 25, no. 1, pp. 191–199, 2018, doi: 10.1007/s11356-017-0649-z.
- [115] H. Matsuda and K. Takeuchi, *Approach to Biofuel Issues from the Perspective of Sustainability Science Studies*. 2018. doi: 10.1007/978-4-431-54895-9_2.
- [116] A. Gupta, R. Chaudhary, and S. Sharma, “Potential applications of mahua (*Madhuca indica*) biomass,” *Waste and Biomass Valorization*, vol. 3, no. 2, pp. 175–189, 2012, doi: 10.1007/s12649-012-9107-9.
- [117] O. P. Sidhu, H. Chandra, and H. M. Behl, “Occurrence of aflatoxins in mahua (*Madhuca indica* Gmel.) seeds: Synergistic effect of plant extracts on inhibition of *Aspergillus flavus* growth and aflatoxin production,” *Food Chem. Toxicol.*, vol. 47, no. 4, pp. 774–777, 2009, doi: 10.1016/j.fct.2009.01.001.
- [118] A. Singh and I. S. Singh, “Chemical evaluation of mahua (*Madhuca indica*) seed,” *Food Chem.*, vol. 40, no. 2, pp. 221–228, 1991, doi: 10.1016/0308-8146(91)90106-X.
- [119] P. R. Kachhadiya, N. K. Patel, and P. B. Mehul, “Design and development of small scale Biodiesel production unit,” *Int. J. Fluid Therm. Eng.*, vol. 7, no. December, pp. 8–13, 2019.
- [120] M. Salaheldeen, M. K. Aroua, A. A. Mariod, S. F. Cheng, M. A. Abdelrahman, and A. E. Atabani, “Physicochemical characterization and thermal behavior of biodiesel and biodiesel-diesel blends derived from crude *Moringa peregrina* seed oil,” *Energy Convers. Manag.*, vol. 92, pp. 535–542, 2015, doi: 10.1016/j.enconman.2014.12.087.
- [121] A. Gautam and A. K. Agarwal, “Determination of important biodiesel properties based on fuel temperature correlations for application in a locomotive engine,” *Fuel*, vol. 142, pp. 289–302, 2015, doi: 10.1016/j.fuel.2014.10.032.
- [122] H. T. Hegde, R. P. Gunaga, and N. S. Thakur, “Variation in seed oil content among 13 populations of Mahua (*Madhuca longifolia* var. *Latifolia* (Roxb.) A. Chev.) in Gujarat,” ~ 35 ~ *Int. J. Chem. Stud.*, vol. 6, no. 5, 2018.
- [123] S. Gowrishankar and A. Krishnasamy, “A relative assessment of emulsification and water injection methods to mitigate higher oxides of nitrogen emissions from biodiesel fueled light-duty diesel engine,” *Fuel*, vol. 308, p. 121926, 2022, doi:

<https://doi.org/10.1016/j.fuel.2021.121926>.

- [124] S. Y. Lin, Y. Suzuki, H. Hatano, and M. Harada, “Hydrogen production from hydrocarbon by integration of water-carbon reaction and carbon dioxide removal (HyPr-RING method),” *Energy and Fuels*, vol. 15, no. 2, pp. 339–343, 2001, doi: 10.1021/ef000089u.