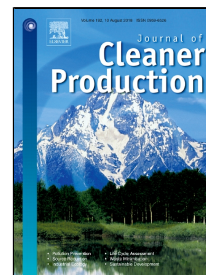


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A study on performance, combustion and emission behaviour of diesel engine powered by novel nano nerium oleander biofuel



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1 **A study on performance, combustion and emission behaviour of**
2 **diesel engine powered by novel nano nerium oleander biofuel**

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10
11 **Abstract**

12 In connection with the threatening environmental pollution and stringent emission
13 norms, the present experimental research studies the effect of utilizing cerium oxide
14 nanoparticle mixed with an emulsion of nerium oleander biofuel (ENOB) on a
15 compression ignition (CI) direct injection (DI) diesel engine. The whole probe was
16 persuaded using a mono-cylinder 4-stroke direct injection CI engine. A novel nerium
17 olender biofuel was extracted and esterified. Later it was converted into the emulsion
18 of nerium oleander biofuel, that ensued in diluted oxides of nitrogen and in reduced
19 smoke opacity emission. However it produced a marginal penalty of CO and HC
20 emission when equated with neat nerium oleander biofuel. Subsequently, the nano
21 particle blended emulsion of nerium oleander biofuel depicted dramatic diminution in
22 CO, smoke opacity, HC, and NO_x emission when equated with standard fossil diesel,
23 neat nerium oleander biofuel and an emulsion of nerium oleander biofuel at various

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