

## Inorganic fuels mixtures for automotives propulsion engines

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**Abstract** The objective of this study is the evaluation of the opportunity to use an inorganic oxygenated compound as ammonium nitrate or urea, to reduce fossil fuels pollution. Our research takes into account the ammonium nitrate water solution, mixed with diesel fuel, in various proportions, as fuel for a diesel engine. The results are very promising, the reduction of the consumption is near 20% and the reduction of particulate matter emission is near 75%, without particulate filter on the exhaust pipeline. The paper intends to explain the ammonium nitrate influence in this process. It is to consider the role of the oxygen which is released in the process of ammonite decomposition in the engine cylinder and the role of the atomic nitrogen, which results in the same process, as fuel with a great energetic value. The energy released at the formation of a nitrogen molecule, N<sub>2</sub>, with his triple chemical bond N≡N, is almost the same as the carbon burning but without CO<sub>2</sub> as reaction product.

*Keywords:* combustion and mechanical efficiencies, binary fuel, chemical supercharging.

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