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## Modeling of Deceleration Fuel Cut-off for LPG Fuelled Engine using Fuzzy Logic Controller

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### Abstract

At the time of deceleration, continuous LPG flow in LPG fuelled engine causing over fuel consumption and increasing exhaust emissions, while the engine does not need fuel. Therefore, this paper presents a simulation of deceleration fuel cut-off (DFCO) system. Given that the fuel system control is complex and non-linear, modeling with fuzzy logic controller (FLC) has been selected because of simple, easy to understand and tolerant to improper data. The engine modeling is divided into several sections, including intake manifold dynamics and engine dynamics. The input values were processed by the membership function. A series of simulation results indicate that DFCO can be applied. The combination of throttle valve position, engine speed and manifold pressure is able to cut LPG flow at deceleration. As a conclusion, DFCO system is promising to be applied on LPG-fuelled vehicles for saving fuel and reducing emissions.

### Keywords

LPG fuelled engine; Deceleration; deceleration fuel cut-off; Air to fuel ratio

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DOI: <http://dx.doi.org/10.4273/ijvss.9.4.12>

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