



The Performance of a Modified Al-Doura Pool Gasoline

DOI:

10.1080/10916466.2011.652333

[E. A. Eh Sheet^a](#) & [J. A. Yamin^b](#)

pages 2031-2038 **Petroleum Science and Technology**

Volume 31, Issue 20, 2013

Publishing models and article dates explained

- Received: 4 Nov 2011
- Accepted: 19 Dec 2011
- Published online: 28 Aug 2013

Abstract

A simulation study was conducted on a four-stroke, water-cooled, spark ignition engine using fuels produced by Al-Doura Oil Refinery. The fuels used were the unmodified Al-Doura Pool (April Formulae) and the enhanced pool formulae (called S₁ and S₃). First, the fuel properties were experimentally measured. Then the engine performance and emission characteristics were studied. Results showed improvement in most of the fuel properties such as calorific value, sulfur content, ON, gum content, and energy density. On the engine side, the brake power, torque, thermal efficiency, brake specific fuel consumption, and sulfur dioxide levels improved, while heat loss and NO_x emissions increased.

Keywords

- [engine performance](#),
- [fuel improvement](#),
- [gasoline fractionation](#),
- [LSRN and reformat and power formate](#),
- [SI engine simulation](#)