

Proof that On-Board Brown's Gas (BG) Generation & Supplementation Works (abbreviated version)

by George Wiseman, Version Feb. 22, 2011

'Experts', critics and skeptics have long **demanded** *credible, applicable, scientific verification* that on-board electrolyzers are a viable technology.

This is a partial list of documents from my 'HyZor Proofs' whitepaper.

For the latest updated version go to: <http://tinyurl.com/5tke4pj>.

Please feel free to send this abbreviated list to anyone who thinks that on-board electrolyzer technology isn't valid.

These are scientifically credible documents to prove that adding *supplemental* Brown's Gas (BG), produced *on-demand* and *on-board* the vehicle, to ordinary carbon-based fuels **can** improve combustion efficiency enough to reduce net fuel consumption and pollution *while maintaining full power and performance*.

Brown's Gas (BG) is also known under many **trade names** including *but not limited to*:

Rhode's Gas, Hydroxyl, Spirig Gas, Hydroxy, Green Gas, Klein Gas, Aquygen, HHO, HRG, SG Gas, Ohmasa Gas, 'Higher Energy Water' and OxyHydrogen.

All truth passes through three stages: First, it is ridiculed; Second, it is violently opposed; Third, it is accepted as self-evident. ~ Arthur Schopenhauer (1788-1860)

GUIDELINES FOR USE OF HYDROGEN FUEL IN COMMERCIAL VEHICLES ~ Final Report November 2007

<http://www.fmcsa.dot.gov/facts-research/research-technology/report/Guidelines-H2-Fuel-in-CMV's-Nov2007.pdf>

This document specifically mentions on-board electrolysis in Sections 1.2.3, 1.5 and 3.5.

They claim tests on an old diesel got gains of 4% in economy and 7% less particulates.

<http://papers.sae.org/971703>

Combustion Characteristics of Electrolytically Produced Hydrogen-Oxygen Mixtures

"The paper reports and evaluates the combustion pressures of electrolytically produced stoichiometric hydrogen-oxygen mixtures..."

<http://papers.sae.org/2003-32-0011>

Investigating Combustion Enhancement and Emissions Reduction with the Addition of $2H_2 + O_2$ to a SI Engine

**I included this document as further proof that BG is NOT the same as H_2 and O_2 ,
There is no catalytic action when using pure H_2 & O_2**

"...The hydrogen and oxygen were added in a ratio of 2:1, **mimicking** the addition of water electrolysis products... Under the conditions tested, the power necessary to generate the hydrogen on board through electrolysis was greater than what was gained from the engine."

<http://papers.sae.org/2006-01-3431>

Effects of Gasoline-Air Enrichment with HRG Gas on Efficiency and Emissions of a SI Engine

"The present contribution describes the results of an experimental research where gasoline-air mixture was enriched with a Hydrogen Rich Gas (HRG) produced by the electrical dissociation of water. The HRG analysis shows the presence of hydrogen and oxygen together with some additional species... The possibilities of improving engine performance and emissions in correlation with the amount of HRG, the equivalence ratio and the engine operating condition are thus outlined."

<http://papers.sae.org/2010-01-2190>

Hydrogen Enriched Diesel Combustion

"...using conventional diesel fuel with mixtures of hydrogen and oxygen generated from water at the point of use...the experiments and the systematic approach followed to reduce the fuel consumption and CO_2 are presented in this paper."

International Journal of Hydrogen Energy

Volume 16, Issue 10, 1991, Pages 695-702 (<http://tinyurl.com/5w4e9ny>)

Driving cycle simulation of a vehicle motored by a SI engine fueled with H_2 -enriched gasoline

"...(theoretical) significant reduction in the total fuel consumption in the order of 15 to 20% and an associated reduction in HC, CO and NO_x emission levels, is achieved..."

International Journal of Hydrogen Energy

Volume 25, Issue 9, 1 September 2000, Pages 895-897 (<http://tinyurl.com/4z7yrq5>)

Fuel economy improvement by on board electrolytic hydrogen production

“...(actually) tested on four cars... without altering any performance criteria, the system yields 35±40% fuel savings and reduces exhaust emissions.”

International Journal of Hydrogen Energy

Volume 24, Issue 6, 1 June 1999, Pages 577-586 (<http://tinyurl.com/4puzjny>)

Hydrogen as an additive to methane for spark ignition engine applications

(Theoretical) “range of viable operation of such an engine is very narrow”

International Journal of Hydrogen Energy

Volume 35, Issue 20, October 2010, Pages 11366-11372 (<http://tinyurl.com/4eIndxd>)

Hyceltec 2009 Conference

Effect of hydroxy (HHO) gas addition on performance and exhaust emissions in compression ignition engines

“...HHO system addition to the engine without any modification resulted in increasing engine torque output by an average of 19.1%, reducing CO emissions by an average of 13.5%, HC emissions by an average of 5% and SFC by an average of 14%.”

International Journal of Hydrogen Energy

Volume 35, Issue 23, December 2010, Pages 12930-12935 (<http://tinyurl.com/4qlyrrq>)

Asian Hydrogen Energy Conference 2009

Reduction of fuel consumption in gasoline engines by introducing HHO gas into intake manifold

“Test experiments were conducted on a 197cc (Honda G 200) single-cylinder engine... goals of the integration are: a 20–30% reduction in fuel consumption, lower exhaust temperature, and consequently a reduction in pollution”

Fuel

Volume 89, Issue 2, February 2010, Pages 378-383 (<http://tinyurl.com/4s9xswj>)

Effect of H₂/O₂ addition in increasing the thermal efficiency of a diesel engine

“...resulted in 15.07%, 15.16% and 14.96% fuel savings. The emissions of HC, CO₂ and CO decreased, whereas the NO_x emission increased.” *I note they didn't add water injection.*