Re: Maybe you guys can understand this (methanol related)

Source: http://sci.tech−archive.net/Archive/sci.energy.hydrogen/2006−08/msg00186.html

- *From*: "G. R. L. Cowan" <gcowan@xxxxxxxx>
- *Date*: Fri, 28 Jul 2006 16:46:57 −0400

AKA Gray Asphalt wrote:

> "G. R. L. Cowan" <gcowan@xxxxxxxx> wrote in message
> news:44CA4CB0.544E7ABA@xxxxxxxxxxx
>
> > AKA Gray Asphalt wrote:
> >
> > > This article seems to answer a lot of questions brought up
> > > here about
> > > methanol, but I can't understand it very well, as it is pretty
> > > technical
> > > for
> > > education level in science. Maybe you guys can translate and
> > > critique it
> > > ...
> > >
> > > http://www.fuelcellsworks.com/Supppage4854.html
> >
> > Only one lie that I could see:
> >
> > "... In 2001, Prakash and his colleagues developed a new membrane
> > ... With this refinement, the direct methanol fuel cell
> > gives an efficiency of 35 percent,
> > about twice that of an internal combustion engine ..."
> >
> > 35 percent is in fact about what car engines give at the
> > driveshaft. Powertrains lose some, so not so much arrives
> > at the tire contact patches, but it's very dishonest to
> > suggest that the 35 percent that may, conceivably, have been
> > seen in a very low−specific−power methanol fuel cell
> > wouldn't similarly collapse like last year's jack−o'lantern
> > if it came off a lab bench, and kilowatts−per−kilogram were added,
> > and an EV powertrain, and manufacturability and durability.
> >
> > Aside from a little extra bulk and weight, methanol, IIRC,

> is a pretty decent diesel fuel. If it ever drives a production
> car, it will do so in the same way it now drives race cars:
> by burning.
>
> −−− G. R. L. Cowan, former hydrogen fan
> "Boron: A Better Energy Carrier than Hydrogen?"
> http://www.eagle.ca/~gcowan/Paper_for_11th_CHC.html

> Thanks for reading the article and giving your thoughts. The 35% is a very
> important number, though. But I wouldn't call it a lie, just yet. It may be
> a difference in terminology or something else, no? What do you mean by 'very
> low−specific−power'? Does that mean that the battery was tested at low power
> and torque? Are you saying that methanol batteries aren't now and never will
> be viable power sources for vehicles?
> How about for grid power? Replacement for petroleum in plastic production?

Methanol can be polymerized into into linear alkanes.
I believe there is a South African plant that makes paraffin wax
this way. So conceivably longer chains could be made also.

I don't expect methanol oxidation batteries ever to be prime movers.
Internal combustion is too good, and methanol's well−suitedness
to that mode of use is already well known.

The article's conclusion that a high−power, inexpensive methanol
oxidation battery is the "Holy Grail" implies that such experiments
as have been done have been at low power and high cost.
You say torque, but there is no sign any shaft has been turned.

Note also how the title and the final paragraph suggest methanol
can succeed *hydrogen* as fuel cell fuel. Those are not big shoes
to fill.

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