Biofuel obtained from chlorides

Preface

Concerning the method already given, I perceive that could possibly lower the pressure required to obtain methanol CH3OH ,
I am confident we could use the pressure
air instead of 200 bar (or atmosphere) as already indicated,
here's why:
I noticed the following equation in the Larousse Encyclopedia Francaisse:

CO2 + 4 H2 ...> CH4 + 2 H2O (équa. i), with nickel oxide as a catalyst,

the following equation was probably also taken in the French Larousse Encyclopedia:

CH4 + H2O ...> CO + 3 H2 (équa. ii) , with nickel as a catalyst and a temperature greater than 500 degrees Celsius,

if inverse equation ii and using nickel oxide as the catalyst, this gives:

CO + 3 H2 ...> CH4 + H2O (équa. iii) ,

Here is my deduction, as we know That It is Possible to Obtain methanol CH3OH oxygenation
controlled methane CH4:

CH4 + (1/2) O2 ...> CH3OH (équa. iiii) ,

then from equation iii and equation iiii, I deduced that:

CO2 + 3 H2 ...> CH3OH + H2O (equation iiiii), at atmospheric pressure,

a pressure above atmospheric pressure could perhaps improve performance.

Here I will add the process that I had already published, then add in the references,

the Dow process for obtaining magnesium and chlorine from the magnesium chloride,

the details of Peter Harrison process which was published in The Independent newspaper,

here is the process I have already published:

First application

Biofuel obtained from limestone and water electrolysis magnesium chloride

with everything Biofuel carbon is recovered in the air by
means of limestone, its combustion does not contribute , its combustion Does not contribute to
increase the greenhouse effect.

Biofuels are solutions for energy storage
and to get them I suggest using limestone, water and chloride of magnesium:

First, if we take the necessary carbon from CO2 from limestone,

this is equivalent to take the CO2 in the air as the CaO obtained from the heating

capture CO2 in air:

CaCO3 + heat ...> CaO + CO2 ,

CaO + CO2 (from air) ...> CaCO3 ,

Then the hydrogen needed to Obtain, can be first

electrolysis of molten magnesium chloride MgCl2 (714 degrees Celsius),
which gives us the magnesium Mg and chlorine Cl2 ,
Such as reaction of magnesium with dilute hydrochloric acid gives hydrogen,
with dilute hydrochloric magnesium
I therefore suggest that the manufacture of hydrochloric acid to make from the reaction of chlorine with water vapor, using a catalyst reaction of chlorine with steam, using a catalyst
such as activated charcoal as follows:

$2H_2O + 2Cl_2 \ldots> 4HCl + O_2$,

the reaction product thus also of oxygen O2 in addition to the acid chloride HCl.

The reaction yielding hydrogen is as follows:

$Mg + 2\ HCl \ldots> MgCl_2 + H_2$,

note that the limestone CaCO3 and magnesium chloride MgCl2
are constantly recycled and we still need the same amount that Constantly recycled and we still need the same Amount That
departure, INITIALLY,
for our biofuel In addition to hydrogen, it takes
methanol to obtain this, I suggest to react 3 mol of dihydrogen H2 with CO2 from limestone, first mole
of hydrogen transform CO2 into CO and H2O, as follows:

$CO_2 + H_2 \ldots> CO + H_2O$,

then for obtained methanol it is necessary to react two moles of hydrogen with one mole of CO
must then be reacted with two moles of hydrogen, do not forget to use a
catalyst (zinc oxide, copper oxide and chromium) in a
temperature 200 degrees Celsius and a pressure of about 200 atmosphere,
here this reaction:
$CO + 2\ H_2 \ldots> CH_3OH$,

if reacting one mole of methanol with one mole of hydrogen
is methane obtained as follows:

$CH_3OH + H_2 \ldots> CH_4 + H_2O$,

(note added March 10, 2013: I notice that if we add these two last equations, we obtain the equa. iii),

if you want to get a heavier biofuels, it is necessary to react many moles of methanol with one mole of hydrogen,
for example, for ethane (2 carbon chains) must be reacting two moles of methanol with one mole of hydrogen, to propane (3 chains carbon) must be 3 moles of methanol with one mole of hydrogen),
for butane (4 carbon chains), must be Reacting 4
moles of methanol with one mole of hydrogen, so here is a mole of methanol with one mole of hydrogen,
so here is a example for the butane:

$4CH_3OH + H_2 \ldots> C_4H_{10} + 4H_2O$,

also note that we can react two different alcohols for obtain
heavier alcohol and reaction with hydrogen eliminates the alcohol function,
take the example of the addition of methanol with
ethanol gives propanol and water:

$C_2H_5OH + CH_3OH \ldots> C_3H_7OH + H_2O$,

then if we add one mole of hydrogen with one mole of propanol

we obtain a mole of propane and one mole of water as follows:

$C_3H_7OH + H_2 \ldots> C_3H_8 + H_2O$,

but for obtain propane C_3H_8 it is more easy if we add this two équation for make one equation:

$C_2H_5OH + CH_3OH + H_2 \ldots> C_3H_8 + 2H_2O$,

Gas is a mixture of heptane and octane ($C_7H_{16} + C_8H_{18}$) ,
Gasoline is a mixture of heptane and octane ($C_7H_{16} + C_8H_{18}$),
oil or diesel or heating oil is represented by $C_{18}H_{38}$,
kerosene is intermediate between gasoline and diesel.

The Fischer-Tropsch process uses CO with dihydrogen,
here I instead used the CO_2 with hydrogen.

Second application

Biofuel obtained from the electrolysis of chloride in solution sodiun

$6\ NaCl$ electrolyzed $\ldots> 6\ NaOH + 3\ H_2 + 3\ Cl_2$,

take the following equation as a basis for producing methanol:

$CO_2 + 3\ H_2 \ldots> CH_3OH + H_2O$ (with nickel oxide as a catalyst),

just 2 NaOH to capture a molecule of CO_2 in the air:

$2\ NaOH + CO_2 \ldots> Na_2CO_3 + H_2O$,

it is now reacting Na_2CO_3 and NaOH with the other 4 hydrochloric acid HCl
(HCl being the form of the reaction of chlorine and water vapor).

to regenerate 6 NaCl and get the CO_2 :

$Na_2CO_3 + 4\ NaOH + 6HCl \ldots> 6NaCl + 5H_20 + C02$,

Here, our sodium chloride is regenerated and got our CO_2,

Troixième Application

Biofuel obtained from electrolysis of calcium chloride solution

$3CaCl_2$ electrolise $\ldots> 3Ca(OH)_2 + 3H_2 + 3Cl_2$,

the following equation as a basis for producing methanol:

$CO_2 + 3\ H_2 \ldots> CH_3OH + H_20$ (with nickel oxide catalyst),

just a $Ca(OH)_2$ molecule to capture CO_2 in the air:

$Ca(OH)_2 + CO_2 \ldots> CaCO_3 + H_20$,

it is now time to react $CaCO_3$ and two $Ca(OH)_2$ with the acid Hcl
(HCl being the form of the reaction of chlorine and water vapor).

To regenerate and get the $3CaCl_2$ and CO_2:

$CaCO_3 + 2Ca(OH)_2 + 6HCl \ldots> 3CaCl_2 + CO_2 + 5H_2O$,

such as hydrated lime $Ca(OH)_2$ is very soluble in water, it can be storing it at the outer,
lot to regenerate the limestone $CaCO_3$ by capturing carbon dioxide CO_2 in the air or in

the water.

References: References:

Fischer-Tropsch Process Fischer-Tropsch

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Authors: Omer Bastien, B.Sc.
Benoit Ladouceur, D.Sc.
Hubert Laniel M.Sc.,
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450 Beaumont Avenue, Montreal 1969

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2.The chemical families

Author: M. Tournier
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8101, boul. Metropolitan Montreal., H1J 1J9.

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