Hur får vi ett grönare samhälle?

Diskutera med forskarna Per Alvfors, Klas Engvall, Göran Lindbergh och Lars J. Pettersson här i montern

"From process to system view"

Dept of Chemical Engineering
Challenge we ARE addressing:

- Production and use of sustainable fuels of the 2\textsuperscript{nd} and 3\textsuperscript{rd} generations
For that we need:

Sustainable raw materials? What is that? In a broad sense?
Carbon dioxide?
Carbon dioxide!

If you can use the carbon dioxide as raw material....
...you avoid introducing new fossil carbon based fuels by using the same "carbon atom" once again! (or twice, three times, etc...)..........................
...and if the carbon dioxide comes from a renewable source then you create a renewable fuel!

Double bonus!
“Just” add electricity!
Carbon dioxide and hydrogen gives methane

3rd generation renewable fuel

We work with the reaction between carbon dioxide and hydrogen and with system aspects on the whole concept.
To make this viable we need surplus electricity that needs to be stored in some form!

Possible case in grids with a high part of non continuous generation Wind, solar....
Carbon sources as CO$_2$:

- any fermentation biogas plant gives a mixture of carbon dioxide and methane

But also e.g.:

- cement industry
- steel industry
Gasification gives syngas = carbon monoxide and hydrogen
gives different fuels depending on the process chosen

2nd generation!
We have not reached the summit yet so we keep on climbing!