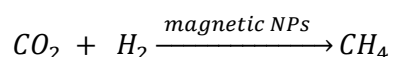


## Power to Gas Concept for CO<sub>2</sub>-neutral Fuel

The increasing need of humanity for energy has become a major issue concerning global pollution and global warming. Scientists are trying to face the issue by looking for alternative energy sources. One of the most promising solutions appears to be the power to gas/liquid concept where the object is the synthesis of hydrocarbons.

The catalytic hydrogenation of carbon dioxide to methane – also known as the Sabatier reaction – is of particular interest<sup>1-3</sup>. Through this reaction, CO<sub>2</sub> which is for example released in the atmosphere at the output of industrial plants could be converted into CO<sub>2</sub>-neutral fuel.

For catalysis purposes, iron nanoparticles and their derivatives are ideal candidates since they combine catalytic activity, appropriate magnetic properties and low cost<sup>4</sup>.



Our technology exploits the magnetically induced hyperthermia of this type of catalyst for the CO<sub>2</sub> conversion into methane which then again may be re-introduced into the carbon cycle as a re-generated energy source.

### References

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