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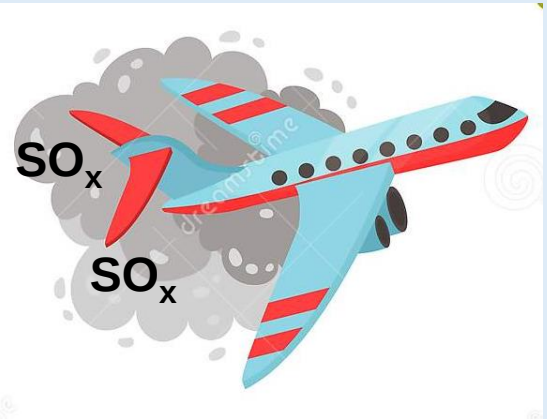

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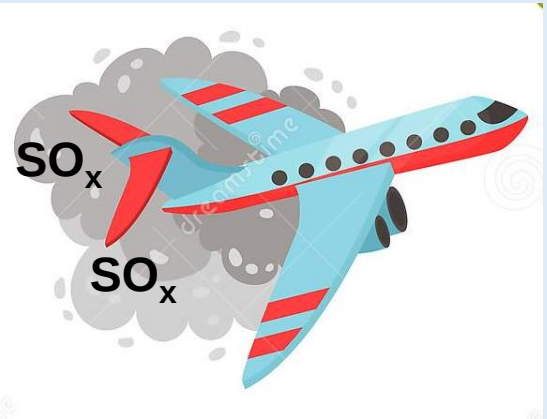


Sulphur oxides (SO_x) are harmful to human health and to the environment.

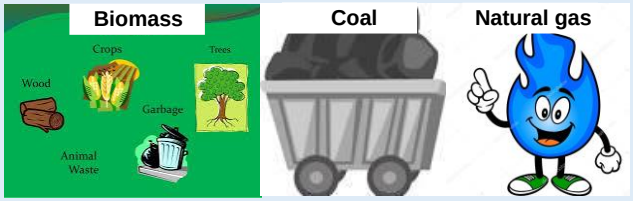
Respiratory symptoms and lung disease

Acid rain (harm crops, forests, aquatic species)

Synthetic fuels

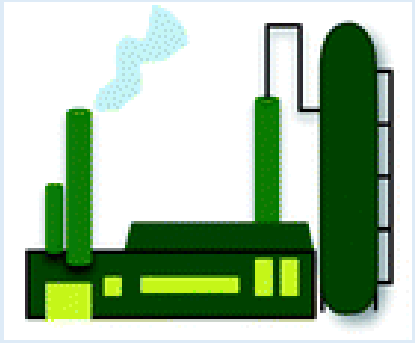
Synthetic fuels from Fischer-Tropsch (FT) reaction

Feedstock

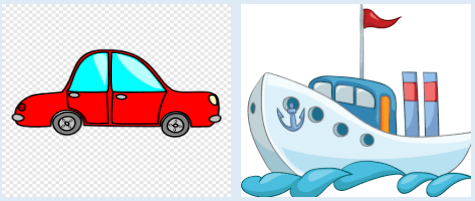


Transportation

Fuel synthesis



FT diesel



FT jet fuel

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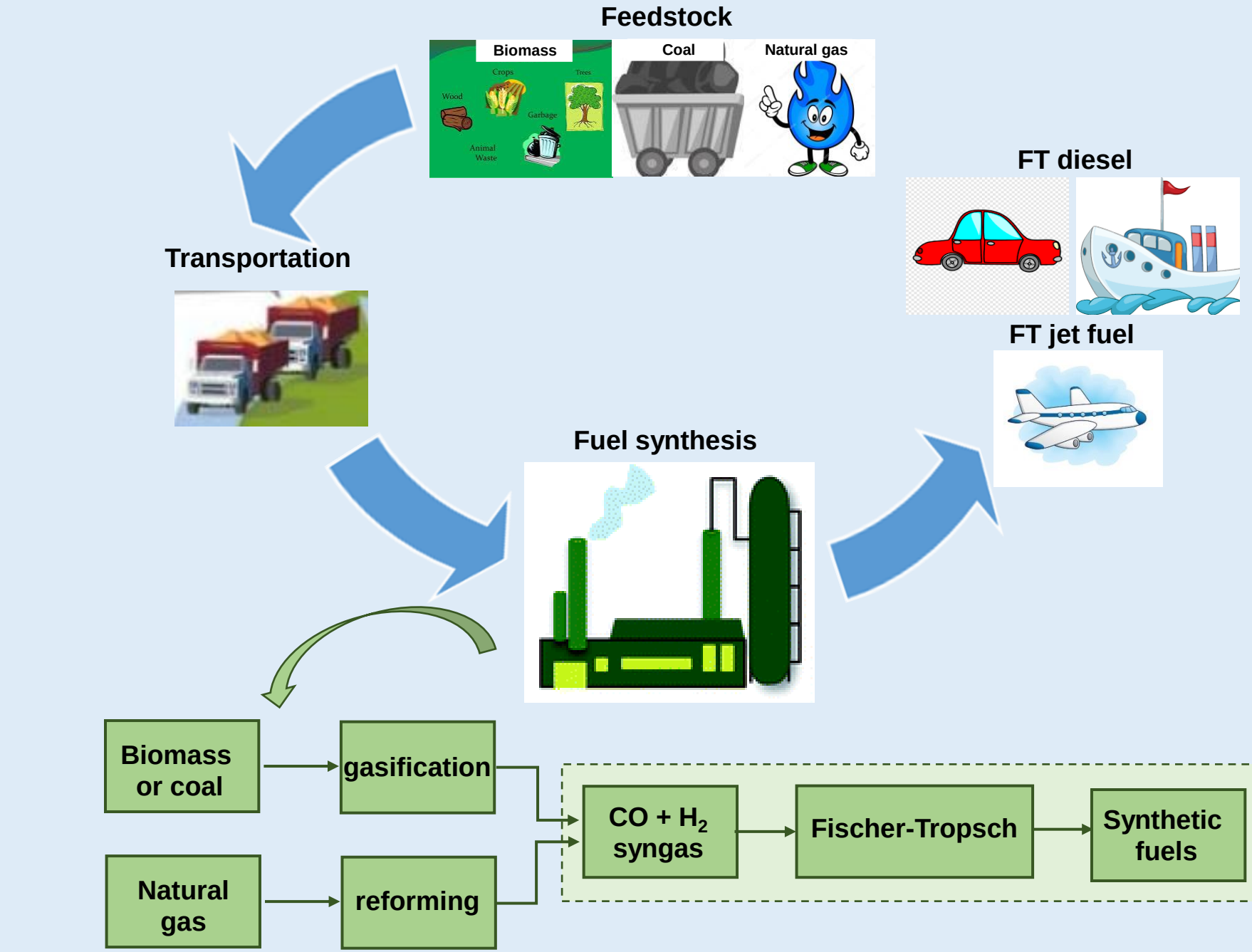

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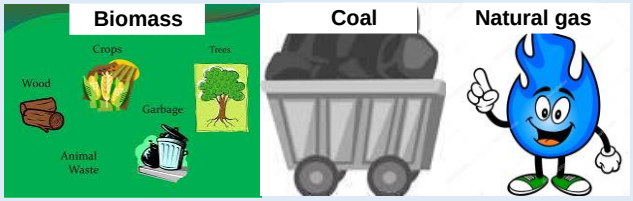

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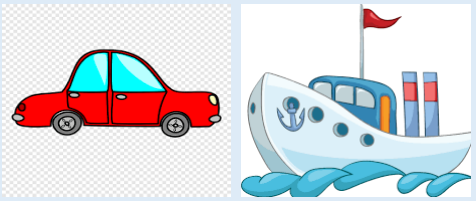

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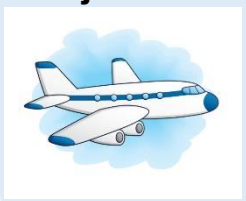

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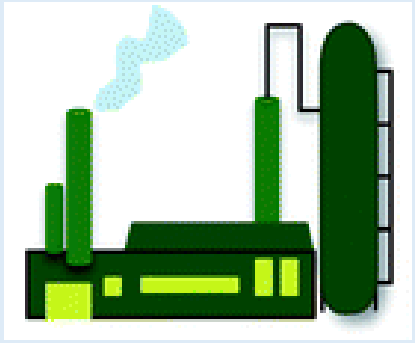
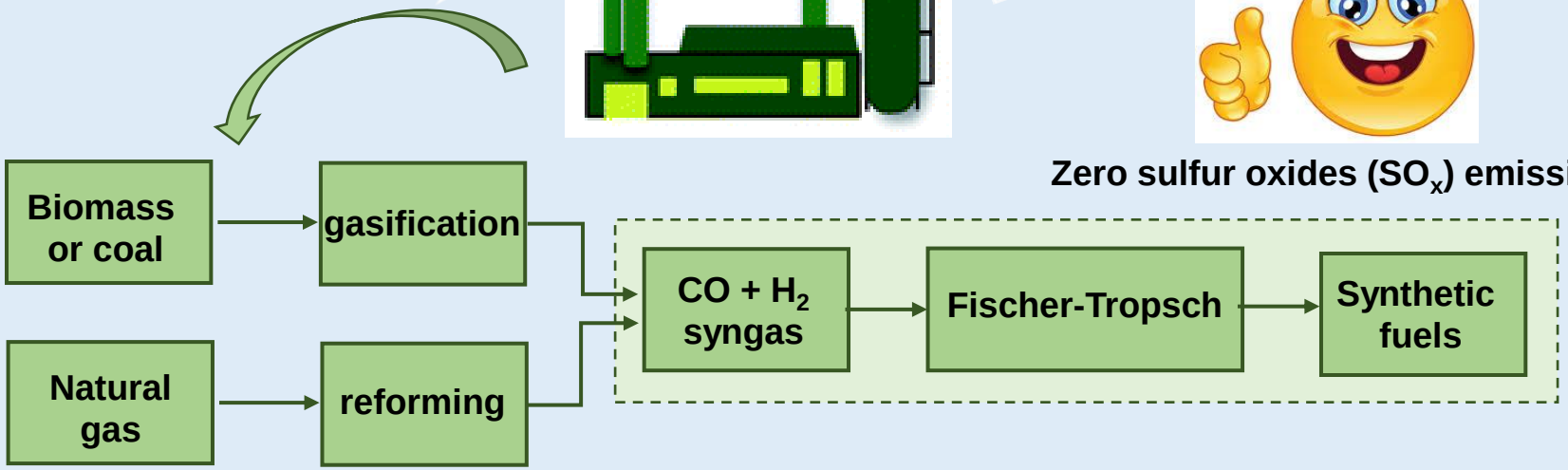


Zero sulfur oxides (SO_x) emissions



Fischer-Tropsch (FT) synthesis

The Fischer-Tropsch (FT) synthesis is an industrial catalytic reaction that converts a mixture of carbon monoxide and hydrogen (syngas) into liquid hydrocarbons (synthetic fuels, C_nH_{2n+2}) and H_2O.

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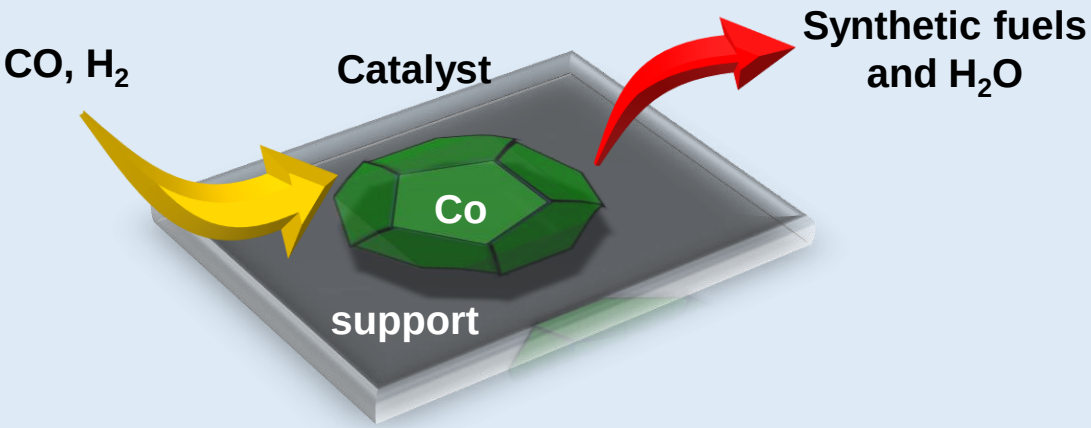

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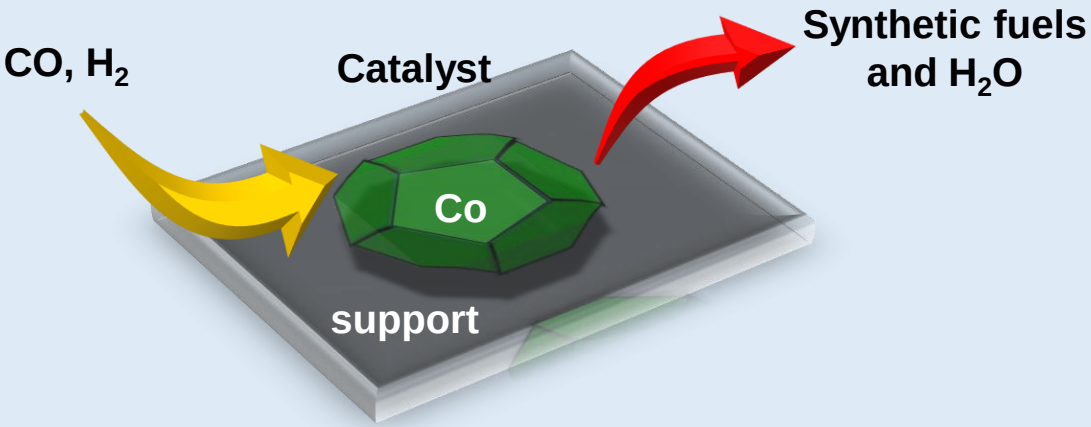

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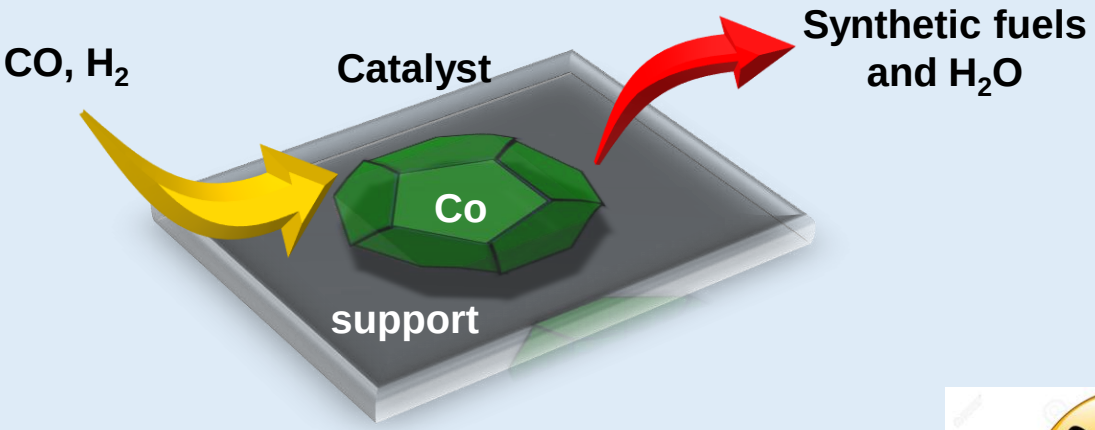

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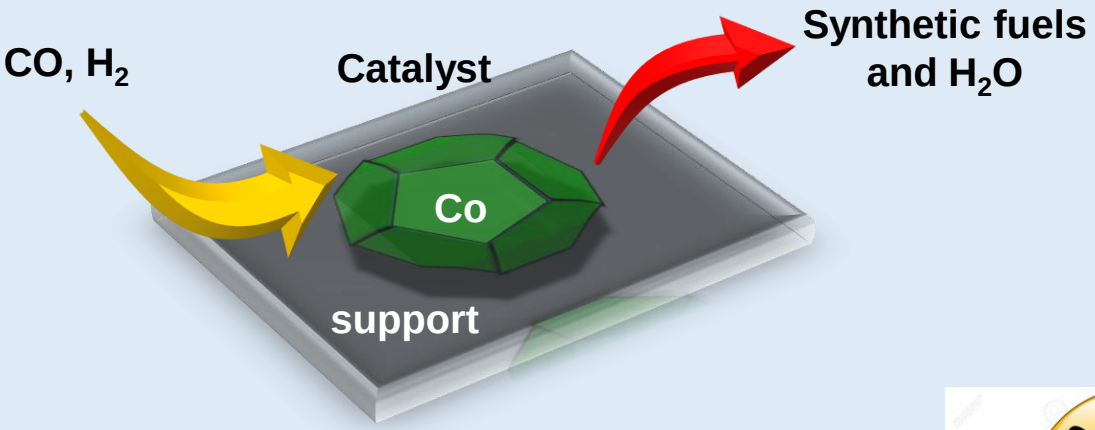

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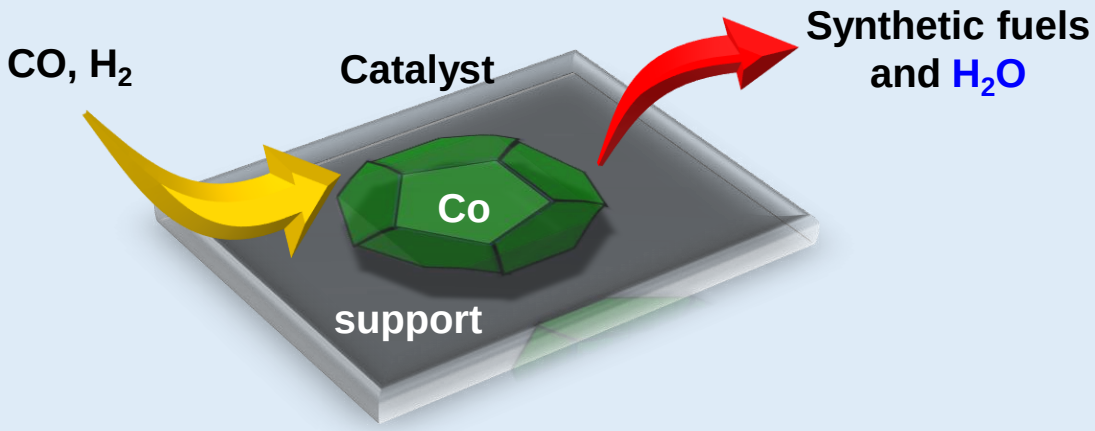
Nowadays, FT-diesel is mixed with diesel derived from crude oil to reduce the emission of pollutants in the environment (SO_x, NO_x, HC, CO, soot).

MECHANISM PROJECT

The aim of this project is to understand the effect of H_2O on FT rates and selectivities and the roles of pore diameter of catalyst, the Co nanoparticle size, the extent of reduction of Co oxide and reaction conditions (e.g. reaction temperature).



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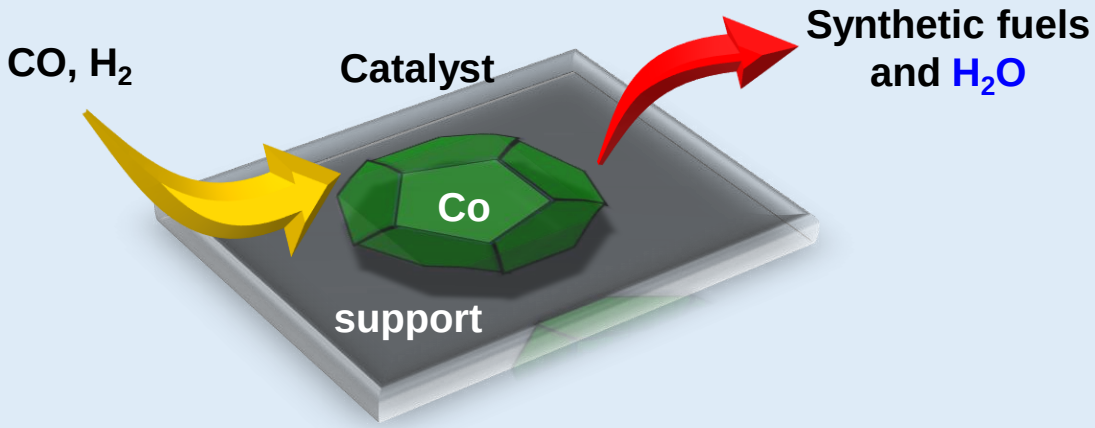

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 703060.