Taking advantage of resources

Oxidative Coupling of Methane followed by Oligomerization to Liquids: Towards sustainable production of high quality fuels and petrochemicals

OCMOL – Short Abstract for external communication

The Kick-off meeting of the OCMOL project (FP7 – N°228953) took place on 15th& 16thof October 2009 at Ghent University, Belgium.
On this occasion, the 17 partners of the consortium met together in order to initiate this five-year European project.

With a budget of around 11.5 millions € and a funding of 7.5 millions €,the OCMOL project is focusing on the development of an alternative chemical route for the valorisation of methane based on oxidative coupling followed by oligomerization to liquids. Nowadays, there are 2 main routes to transform natural gas into liquids: natural gas liquefaction and chemical liquefaction (Fischer-Tropsch synthesis). These routes require large investments which are prohibitive for the exploitation of small natural gas reservoirs or possibly biogas which represent a tremendous potential for liquid fuels production.

The general objectives of the project are twofold:

1. To develop a small-scale process: process intensification via cutting-edge micro reactor technologies will enable to skip the expensive scale-up stage to provide a proof of concept of the OCMOL liquefaction route and allow companies to make go/no go decisions.
2. 2. To develop a fully integrated process, which will be self-sufficient through the re-use and the recycling of the by-products, in particular carbon dioxide.

The OCMOL route will be designed to offer 4 main advantages:

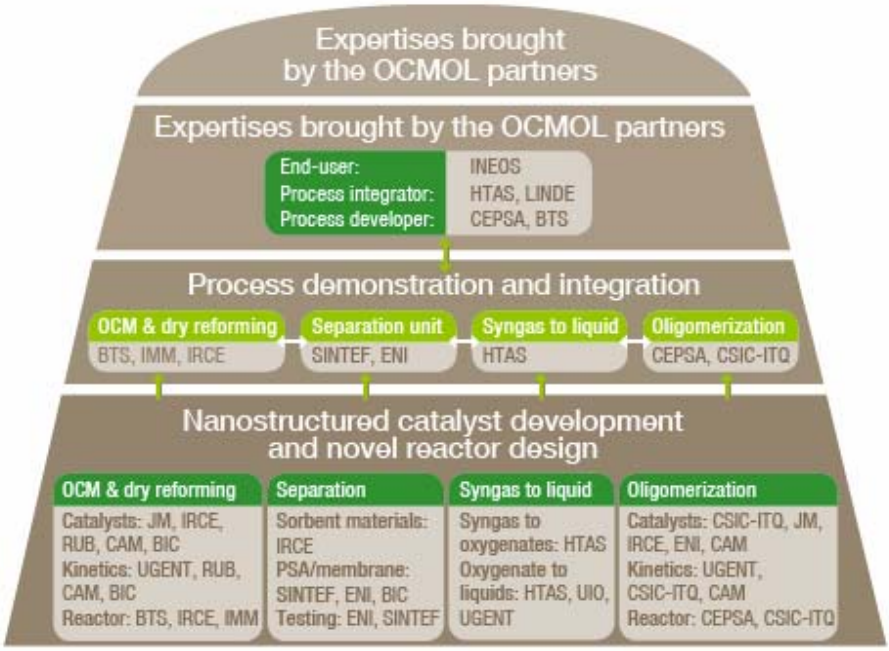
1. An economic operation at capacities of 100kT/year, nowadays not possible by using state of the art technologies.
2. An operation at more uniform pressure levels.
3. 3The flexibility of products streams.
4. Low if not zero CO2emission thus contributing to face global warming.

Major challenges will have to be addressed in the fields of methane oxidative coupling, methane dry reforming, membrane/PSA separation and ethylene oligomerization. They will be met by:

- process intensification to improve the energy efficiency of the whole process, such as integration between the exothermic methane oxidative coupling and the endothermic dry reforming, development of cutting edge materials to design effective catalysts/membranes which are of paramount importance to implement foreseen. the innovative processes foreseen.
- using micro reactor technologies to investigate novel reactor designs necessary to ensure the efficiency and the cost effectiveness of the OCMOL solution.

The consortium at a glance:

The OCMOL partnership gathers 17 entities coming from 8 European countries and 1 non-European country. It has been considered highly valuable to extend the collaboration to a Russian research team (**BIC**) which is very active on the natural gas liquefaction. Moreover, particular efforts have been dedicated to mobilise major European stakeholders to foster industrial perspectives to the research outputs of the project. As a result 7 OCMOL partners are companies (i.e.**BTS, JM, LE, CEPSA, HTAS, INEOS and ENI**) with recognised expertise in the field of material development and process engineering, which confers a strong industrial leadership to the OCMOL project. This pool of industrials will be supported by 4 academic partners (**UGENT, RUB, UIO, CAM**) and 4 experienced research organisations (**IRCE, SINTEF, CSIC-ITQ, IMM**), which will bring their extensive knowledge on the various topics encompassed within the S&T scope of the project.



Next event: **9th Novel Gas Conversion Symposium. C1-C4Chemistry: from fossil to bio resources**, May 30th– June 3rd2010 organised by IRCELYON in Lyon, France.
More information on:www.ngcb.org/ ngbc.kma.net/index.asp

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