***The CARENA project*** aims to create technologies - CAtalytic Reactors based on New mAterials-enabling an efficient conversion of light alkanes and $CO_2$ into higher value chemicals. 18 partners are involved in this project and coordinated by ECN (The Netherlands).

***http://www.carenafp7.eu/***

***The ReforCELL project*** aims at developing a high efficient PEM fuel cell micro Combined Heat and Power cogeneration system based on a novel, more efficient and cheaper hydrogen reformer together to the new design of the subcomponent for the BoP. 11 partners are involved in this project and coordinated by Tecnalia.

***http://www.reforcell.eu/***

***The COMETHY project aims to*** is to develop a compact & fuel-flexible membrane reformer for hydrogen production, adaptable to different heat sources. It is conducted by 12 partners coordinated by ENEA (Italy).

***http://www.comethy.enea.it***

***The DEMCAMER project*** aims to develop innovative multifunctional Catalytic Membrane Reactors based on new nano-architectured catalysts and selective membranes materials to improve their performance, cost effectiveness over 4 selected chemical processes for pure hydrogen, liquid hydrocarbons & ethylene production. It is conducted by 18 partners and coordinated by Tecnalia.

***http://www.demcamer.org***

**New Energy World** Industry Grouping is the leading European industrial association working to accelerate the market deployment of fuel cells & hydrogen technologies. It represents a major part of Europe's hydrogen & fuel cell industry, bringing together more than 60 members – half of them SMEs – established in 17 European countries. The Industry Grouping partners with the European Commission & the research community within the Fuel Cells & Hydrogen Joint Undertaking.

***www.new-ig.eu***



Conception : Dr. Sadika Guedidi (UM2-EMH)

# Scale-up of Pd Membrane Technology

## From Fundamental Understanding to Pilot Demonstration

## 20 & 21 November 2014. The Netherlands

**Venue :** ECN, Westerduinweg 3, 1755 LE Petten, The Netherlands

## Scope & Objectives

*Thanks to their outstanding hydrogen selectivity, palladium membranes have attracted extensive R&D interest in the 21st century with promising "breakthrough" applications for hydrogen power, refining and petrochemicals, hydrogen vehicles and many more. The workshop is the follow-up of the first "Pd-membrane Scale-Up" workshop (Roma, Italy, November 2012), a unique knowledge-sharing experience for both the EU-funded organizing projects and all participants. This experience has strengthened the believe that there is a need and a ground for a second workshop, where the whole Pd-membrane R&D spectrum "From Fundamental Understanding to Pilot Demonstration" will be further explored together by representatives of academia, research institutions and industrial stakeholders.*



## Registration

- *The following link can be used for registration for the workshop:*

  **https://www.ecn.nl/registration/PdMembraneWorkshop/**
- *The workshop is free of charge; travel and accommodation at own expense*
- *The deadline for registration is the 17th of October 2014*
- *After registration a confirmation e-mail will be sent including information on accommodation and transport from hotel to workshop venue at ECN*

## Workshop Programme

### Thursday 20 November 2014

8:30 - 9:00 - Registration

9:00 - 10:00 - **Opening & Welcome**

10:00 - 10:20 - Coffee Break

10:20 - 14:00 - **Session 1: Fundamental aspects of membrane technology**

**1a - $H_2$-transport mechanism/modelling**

**1b - Membrane robustness/ impact of contaminants**

12:00 - 13:00 - Lunch

**1c- Membrane stability/degradation mechanisms**

14:00 - 17:00 - **Session 2: Manufacturing and Scale-up Challenges**

**2a - Membrane manufacturing**

15:00 - 15:20 - Coffee Break

**2b - Membrane module design and construction**

16:20 - 17:00 - **Interactive discussions**

17:00 - 18:00 - **Poster Session + possibility for ECN Labtour**

19:30 - **Dinner and Networking**

### Friday 21 November 2014

9:00 - 12:40 - **Session 3: Towards industrial application**

**3a - Membrane development at the industry**

10:20 - 10:40 - Coffee Break

**3b - Process integration and techno-economics**

12:40 - 13:40 - Lunch

13:40 - 15:00 – **Session 4: Alternative applications**

15:00 - 15:20 - Coffee Break

15:20 - 16:00 - **Interactive discussions**

16:00 - **Closing speech**

16:30 - 17:30 **Possibility for ECN Labtour**