

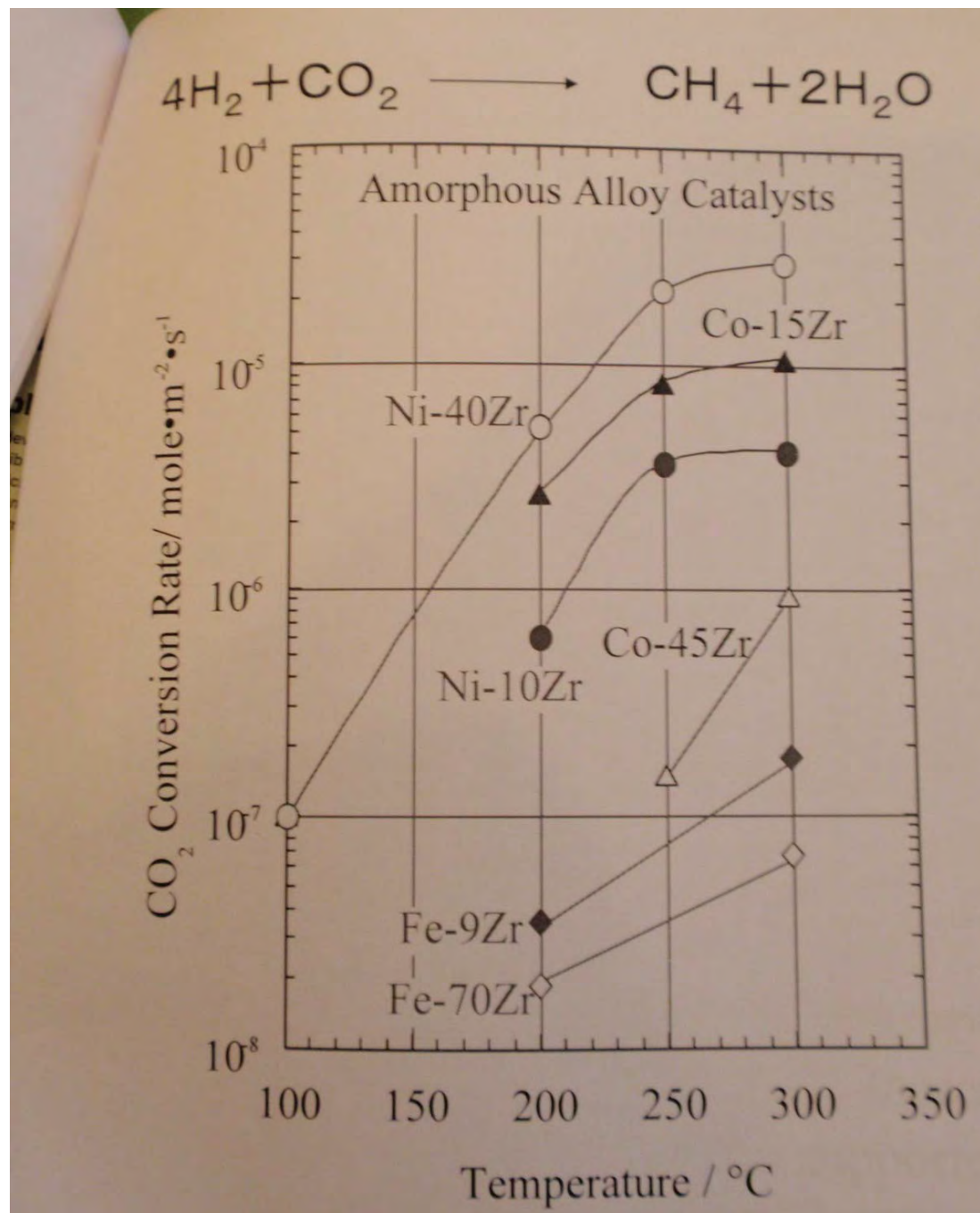
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European Parliament STOA 22 /3/2011

EMRS/UPMC

EMRS Fall Meeting  
Warsaw 13-15 sept 2010  
Symposium A

# Professor K.Hashimoto Sendai University Japon





Catalyst Reactor Sendai University Japon

# Catalytic materials

## anodic Compartment

- Electrolytic electrodes
- Matériau Ti/Mn-Mo-SnOx
- Solution pH = 1,90°C, NaCl = 0,5 M
- Time life 3500 h,  $X_{O_2} = 98 \%-94 \%$

## cathodic Compartment

- Electrode Ni-Fe-C,  $CO_{18}Ni_{13?5}-Fe_{3.4}-C$
- Introduction of specific compounds in the cathodic

- compartment to decrease the H<sub>2</sub> surtension at the electrode.  $H_2$  does not modified the activities of the Ni
- Sites if the level is close to few ppm (10 to 100)

- 5,4 L CH<sub>4</sub>/g cata. H, time life 7500 h

- Catalysist on fixed bed: 35 Zr-5 Sm-Ni  
540 K < T < 580 K

- Catalysist type ZrO<sub>2</sub> stabilized by Sm to keep the tétragonal structure Ni ( actif sites ). It is deposit in an amorphous layer of few micros

-the recrystallisation of ZrO<sub>2</sub> is responsable of the -decrease of catalytic efficiency

NiSO<sub>4</sub> = 1.14 M, NiCl<sub>2</sub> = 0.15 M

H<sub>3</sub>BO<sub>3</sub> = 0.49 M, FeSO<sub>4</sub> = 0.108 M, Lysine (C) = 0.011 M

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# oxycombustion processes

developped by EDF,GDF,

- AIR LIQUIDE etc

