

Departamento de Ingeniería Química y Tecnologías del Medio Ambiente Universidad Zaragoza



STORMING PROJECT: Sustainable Production of H₂ and CNTs by Catalytic Cracking of Biomethane

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Production of Hydrogen and NCM

Catalytic Decomposition of Hydrocarbons

$$C_x H_{y_{(g)}} \Leftrightarrow x C_{(s)} + y/2 H_{2(g)}$$



Production of Hydrogen and NCM

Catalytic Decomposition of (Bio)Methane

 $CH_{4(g)} \Leftrightarrow C_{(s)} + 2H_{2(g)}$



Optimize operating conditions and Fe catalyst (preparation, composition, activation) for high quality CNTs

ST<u>CRM:N</u>G

Highlights

 \checkmark Production of Hydrogen without CO_x (CO, CO₂)

✓ Selective production of high-added value CNTs: SWCNT and DWCNTs

✓ Optimization of productivity of Fe catalyst along time.

