

THE SMARTCATS COST ACTION

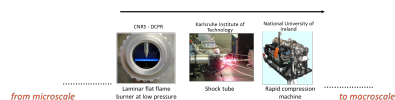
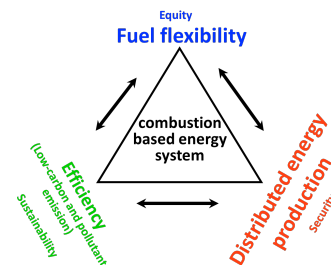
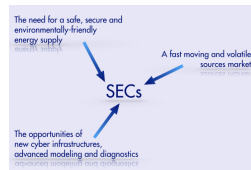
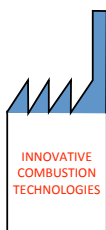
The SMARTCATS COST Action aims to set-up a Europe-wide **network** of leading **academic and research institutions and key industries** to promote the use of **smart energy carriers** on a large scale in order to increase **fuel flexibility** and **carbon efficiency** of energy production and to **support distributed energy generation strategies**.

Addressing the 'grand challenge' of matching the most promising Smart Energy Carriers with the advanced energy conversion technologies

SMARTCATS STRATEGIC VISION

standardized validation experiments
advanced diagnostic tools
predictive models

micro meso macro



New kinetic models AND improved effectiveness of existing models

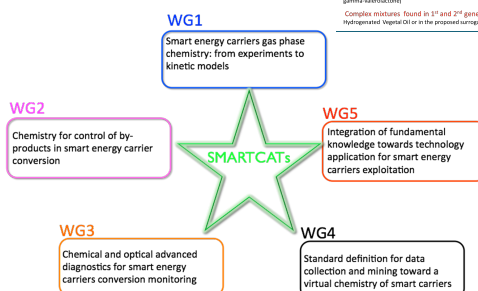
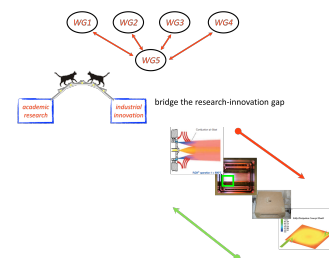
Natural gas mixtures (compressed or liquefied natural gas, single, bio-natural gas containing also large amount of CO and H₂)

Simple molecules present in 1st and 2nd generation biofuels (large normal and iso-paraffins, alcohols, esters, saturated and unsaturated cyclic ethers (e.g. dimerate from furan))

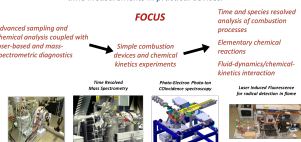
Lipophilic biomass components and molecules derived from their degradation (e.g. gamma-substituted)

Complex mixtures found in 1st and 2nd generation biofuels (such as Fatty Acid Methyl Esters, Hydrogenated Vegetable Oil or in the proposed surrogate)

AIM: provide optimized ready to use tools and techniques for an effective use of SECs on large scale.



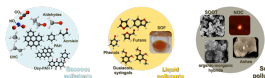
AIM: provide a forum for the development and evaluation of diagnostic tools and procedures ranging from elementary reaction rate determination to real time measurements in practical devices.



A total of 75 organizations from 25 participating countries (EU and Associated States) plus the US, China and Brazil

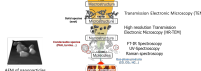


New "fuels" + New technologies = "New" pollutants

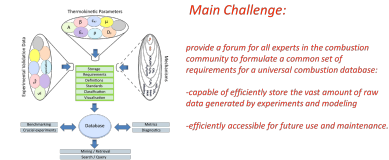


Modeling: gaseous pollutants and particle formation and growth

Solid characterization



AIM: Identification of the main requirements and tools for the development of databases, software and mathematical tools for data collection and handling as well as chemistry optimization using data mining techniques.



Workshops, meetings, conferences

Meetings are organised in any COST country participating in the network. They can be of different types, such as Management Committee meetings, Working Group Meetings, Workshops and Conferences. They are open to the whole scientific community and provide visibility opportunities for the COST Action.

Training schools

Training Schools provide intensive training in emerging research topics within the laboratories and organisations involved in the COST Action. Participants are mainly, but not exclusively, young researchers involved in COST Actions.

Short Terms Scientific Missions

Short-term scientific missions (STM) are exchange visits between researchers involved in a COST Action, allowing scientists to visit an institution or laboratory in another COST country. They are aimed at fostering collaboration, sharing new techniques and infrastructure that may not be available in other participants' institutions or laboratories. STM are intended especially for young researchers.

Strong industrial participation



ACKNOWLEDGEMENTS