



Tips and tricks for the preparation of a COST action

COST Belgian Info Day 2026

March 17th 2026

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Ms Olga Gorczyca (Administrative Officer)



Funded by
the European Union

Action Challenge

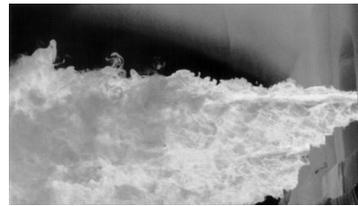
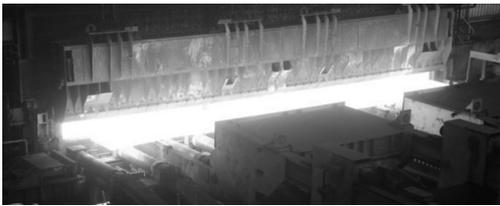
“ Propel the collaborations between European researchers and industrial stakeholders to foster the use of cyber-physical systems and ultimately promote a safe and sustainable adoption of renewable synthetic fuels to decarbonise energy-intensive industries”

Cypher is a COST Action targeting a technical challenge with important societal implications

A black and white photograph of an elephant in a room, surrounded by overturned furniture and a broken lamp, illustrating a technical challenge. The elephant is standing in the center of the room, facing left. To its left, a chair is overturned. To its right, a table is overturned. A lamp is broken on the floor. The room has wood-paneled walls and a wooden floor.

“Around half of energy demand in energy-intensive industries is for high-grade process heat, which is challenging to electrify”
IEA World Energy Outlook 2022

CYPHER is a network of researchers and industrial stakeholders for a safe and sustainable adoption of renewable synthetic fuels in industry



High-temperature heat

Steel, glass, cement, ...



Non-energy sources

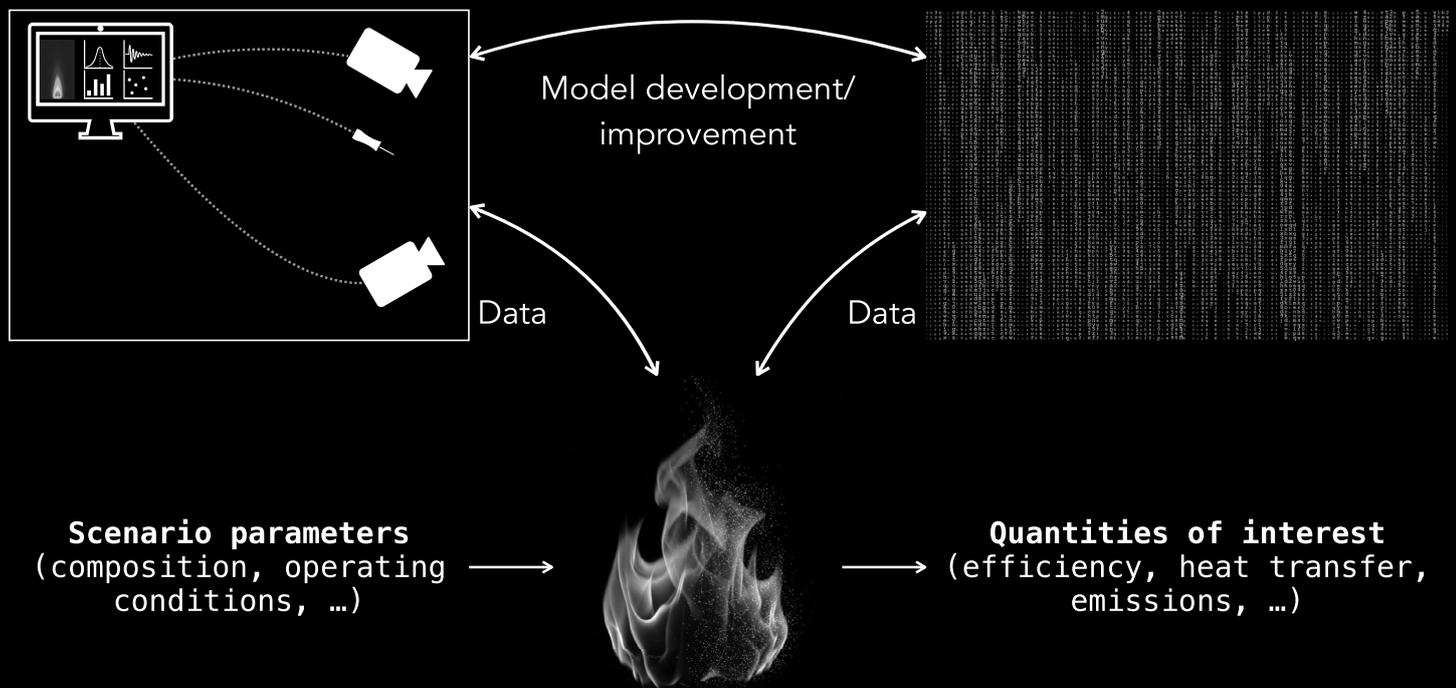
Ammonia and methanol



High-density, local energy sources

Shipping, trucking, aviation

CYPHER aims to drive decarbonization using renewable synthetic fuels by means of digital twins



CYPHER brings together 33 full member and 48 countries in working groups

460 WG members

- 38% from ITC countries
- 25% female members
- 56% young members



Why did we aim for a COST Action?

Heritage and
dynamics



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

COST Action no. CM0901

Detailed Chemical Kinetic
Models for Cleaner Combustion

2010 | 2014

Why did we aim for a COST Action?

**The need to
break silos**

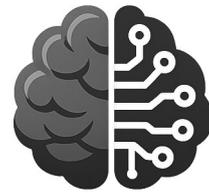
CYPHER challenge needs multidisciplinary
competencies beyond individual disciplines



Chemistry/
combustion



Fluid dynamics



Computer science

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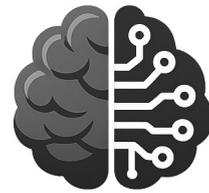
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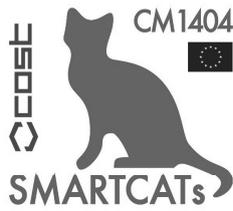
Industrial
implementation



Socio-economic
implications

Why did we aim for a COST Action?

Seeds for a solid network with research funding means



A credible proposal requires set of research coordination objectives targeting multidisciplinary, knowledge creation, and technology transfer

WG1: Renewable synthetic fuels (RSF) combustion



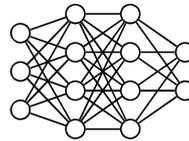
Coordinate the knowledge being created on the combustion properties of RSFs

WG2: High-fidelity combustion simulations and data analytics



Develop methods to automatically extract the key features from data

WG3: Hybrid physics-based data-driven models



Develop numerical simulation approaches using physics-based ML methods

WG4: Digital twins and cyber-physical systems



Develop self-updating digital twins to be deployed in energy-intensive industries (EIs)

A credible proposal requires set of research coordination objectives targeting multidisciplinary, knowledge creation, and technology transfer

WG1: Renewable synthetic fuels (RSF) combustion

WG2: High-fidelity combustion simulations and data analytics

WG3: Hybrid physics-based data-driven models

WG4: Digital twins and cyber-physical systems

WG5: Communication, Dissemination, Partnering with industry and policymakers

Create an interdisciplinary society of researchers, entrepreneurs, and policymakers to discover and eliminate the barriers to decarbonise EIs.

Liaise with industrial partners from the different EIs to understand their energy, investment, and technology needs.

A set of clear and feasible capacity-building objectives shall be identified (with COST excellence criteria in mind)

Decarbonise Ells through a joint research agenda around digital methods, models, and cyber-physical systems



New members



Joint projects



Implementation in industry



CYPHER incubator



YRI careers & gender balance



Joint papers



Knowledge exchange



Involvement of policymakers

A credible COST action requires an solid team of initial proposers and writers

Well balanced and inclusive geographically, age- and gender-wise

Representatives from academic and non-academic research institutes

SMEs and larger companies

Potentially interested stakeholders: governmental organisations, ...

A small and dedicated group of writers, with shared and complementary project view

Teamwork and network mindset

A credible COST action requires an solid team of initial proposers and writers

Network of proposers

31 COST Full Member

COST Inclusiveness Target Countries, 53.1 %

Number of Proposers, 116

Gender Distribution, 56.9% Males, 39.7% Females

Number of Young Researchers and Innovators, 56

Core Expertise of Proposers:

53.4% Mechanical engineering, 12.9% Chemical engineering, 10.3% Environmental engineering, 6.0% Chemical sciences, 6.0% Other engineering and technologies, 10.5% Other

Institutional distribution of the Network of Proposers:

84.5% Higher education, research-performing & associated organisations

4.9% Governmental organisation or agency (national, regional or local)

4.9% Business enterprise (large)

4.9% Business enterprise (small- or medium-sized; SME)

1.0% Non-for profit organisation or association

Write the proposal and then review it as if you were the reviewer

Evaluation based on 3 individual reports and a consensus report (quality checked)

Reviewers are generally very busy people, with many proposals and little time

Study the evaluation criteria and write the proposal accordingly

Prevent reviewers from wandering through a manuscript to find elements that justify evaluation criteria

Write the proposal and then review it as if you were the reviewer



COST Open Call - Independent External Experts' Guide

COST Open Call 2025-1 Evaluation

Date of release: November 2025

Eligibility	Excellence in S&T and Networking					Impact				Implementation		Total (0 - 13)	
	Q1	Q2	Q3	Q4	Q5	Mark.tbd.	Q6	Q7	Q8	Mark.tbd.	Q9		Mark.tbd.
0 Pending													0

Table 4: Scale for the evaluation criteria 1 & 2.

Mark	Label	Description
5	Excellent	The proposal fully addresses all relevant aspects of the criterion. Any detected shortcoming is not affecting the excellence of the proposal under this criterion.
4	Very Good	The proposal addresses the criterion very well. Minor improvements are however needed to fully address the criterion.
3	Good	The proposal addresses the criterion well. Considerable improvements are necessary to fully address the criterion.
2	Fair	The proposal generally addresses the criterion. Weaknesses are significant and major improvements are necessary.
1	Poor	The proposal inadequately addresses the criterion. Weaknesses are inherently serious and would need fundamental reconsideration.
0	Empty section	The proposal does not address the criterion at all. This section is either empty or the criterion has not been addressed either in the relevant section or anywhere else in the proposal.

Table 5: Scale for the evaluation criterion 3 :

Mark	Label	Description
3	Outstanding	The proposal fully addresses all relevant aspects of the criterion. The proposal goes beyond the standard management structure defined by COST Rules, and the workplan is thoroughly presented, appropriate for the main challenge, and tailored to the achievement of the objectives.
2	Standard	The proposal addresses the criterion fulfilling COST standards. The proposal does not go beyond the standard management structure defined by COST Rules, and the workplan is acceptable but needs further elaboration to thoroughly address the main challenge and the objectives.
1	Insufficient	The proposal inadequately addresses the criterion. The proposal does not comply with the standard management structure defined by COST Rules and significantly lacks details on the workplan.
0	Empty section	The proposal does not address the criterion at all. This section is either empty or the criterion has not been addressed either in the relevant section or anywhere else in the proposal.

If you are successful, it is just the start: surround yourself with proactive and positive people

A COST Action is many things: to fully exploit its opportunities, delegation is key!

If you are successful, it is just the start: surround yourself with proactive and positive people



Networking & Researcher Support

7 Major Events: 2 General Meetings, 3 Workshops, and 2 Training Schools, with ~530 overall participants,

250+ Researchers Funded: Provided financial support for event attendance to ensure equitable participation.

24 Individual Grants: 6 Short-Term Scientific Missions (STSMs) and 18 Conference/YRI grants awarded.

Scientific Achievements

Machine Learning Data Challenge: Launched a first-of-its-kind pan-European benchmark for ML-accelerated combustion models.

Invited roadmap for renewable fuel integration and guidelines for data collection (IOP Journal of Physics: Energy).

Featured in the ENGIE 2025 Emerging Sustainable Technologies report.



If you are successful, it is just the start: surround yourself with proactive and positive people

A COST Action is many things: to fully exploit its opportunities, delegation is key!

Favour collaborators at a career stage favouring significant investment

Seek advice from experienced colleagues

Key Leadership positions



Chair and Grant Holder Scientific Representative

Alessandro Parente - ULB - BE



Vice-Chair

Giancarlo Sorrentino - CNR - IT



Grant Awarding Coordinators

Aurélie Bellemans - Vrije Universiteit Brussel - BE
Salvatore Iavarone - CentraleSupélec, FR



YRI and Gender Balance Coordinators

Benedetta Franzelli - CNRS - FR
Tine Seljak - University of Ljubljana - SI



Science Communication Coordinator

Corinna Schulze-Netzer - NTNU - NO



Industrial Liaison Coordinators

Alessandro della Rocca - TENOVA - IT
Anes Kazagic - JP Elektroprivreda BiH - BA



Software and HPC enabling technologies Coordinators

Daniel Mira - Barcelona Supercomputing Center - ES
Alberto Cuoci - Politecnico di Milano - IT



Database and benchmark cases

Paola Cinnella - Sorbonne Université - FR
Pasquale Lapenna - Sapienza Università di Roma - IT



Key Leadership positions



WG1 Leader
Viktor Józsa - BME - Hungary



WG1 Co-leader
Pino Sabia - CNR - Italy



WG2 Leader
Federica Ferraro - TU Braunschweig - DE



WG2 Co-leader
Antonio Attili - University of Edinburgh - UK



WG3 Leader
Katarzyna Bizon - Politechnika Krakowska - PL



WG2 Co-leader
Anh Khoa Doan - TU Delft - NL



WG4 leader
Alberto Procacci - ULB - BE



WG4 Co-Leader
Eduard Petlenkov - Tallinn University of Technology - EE



WG5 Co-Leader
George Skevis - CERTH - GR



WG5 Co-Leader
Sébastien Caillat - FIVES Stein - FR

Advisory Board



Mara de Joannon - STEMS - IT



Juchelkova Dagmar - Technical University of Ostrava - CZ



Frédérique Battin-Leclerc - LRGP, CNRS - FR



Hrvoje Mikulčić - University of Zagreb - HR



George Skevis - CERTH - GR



Welcome to CYPHER COST Action

Transforming Industries Through Sustainable Combustion

JOIN US



ABOUT CYPHER OUR MISSION

CYPHER is a groundbreaking European collaboration focused on **decarbonizing Energy-Intensive Industries (EIs)** through innovative approaches in combustion, fluid dynamics, and data science. With a network spanning 33 countries, including academic experts, industrial partners, and policymakers, **CYPHER is leading the way in sustainable industrial transformation.**

CYPHER is dedicated to advancing the understanding of **Renewable Synthetic Fuels (RSFs)** combustion, high-fidelity simulations, hybrid physics-based data-driven models, and self-updating digital twins. By harnessing the power of multidisciplinary research, we aim to **revolutionize EIs, reduce greenhouse gas emissions, and promote a sustainable future.**

 459 Members	 25% Females	 48 Countries	 58% Young Researchers	 17 ITC Countries
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Questions?

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