Experiments in Combustion

MAKING COMBUSTION CLEANER AND MORE EFFICIENT THROUGH RESEARCH

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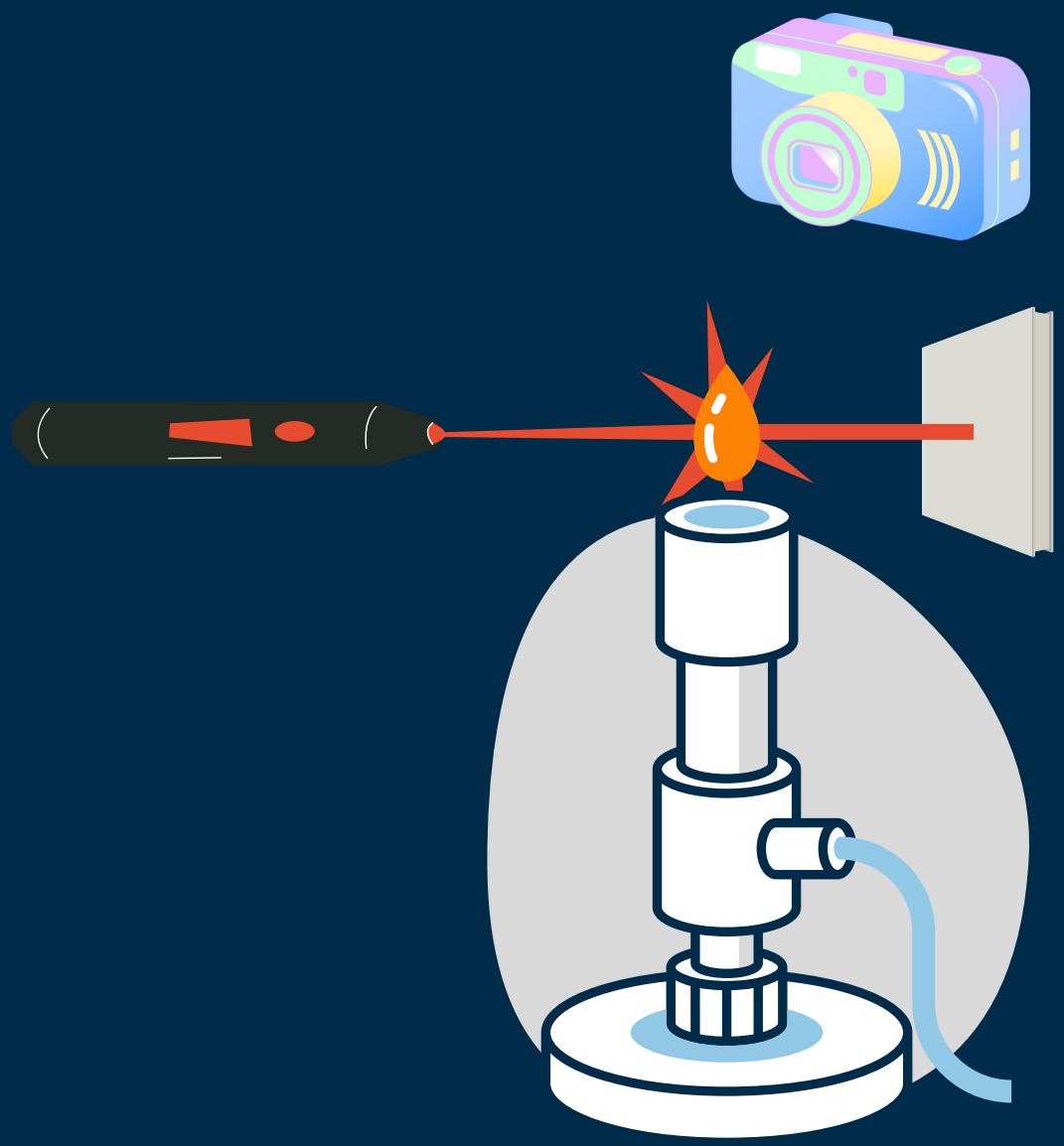
WHAT IS AN EXPERIMENT?

Combustion experiments are controlled studies that help us to understand how fuels burn, what emissions they produce and how their efficiency can be improved.



WHY ARE EXPERIMENTS IN COMBUSTION IMPORTANT?

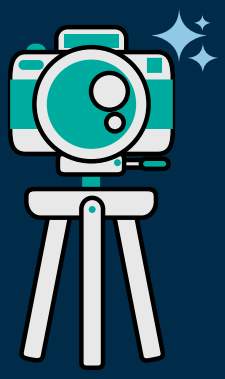
THEY HELP US TO:

Understand fundamental combustion processes

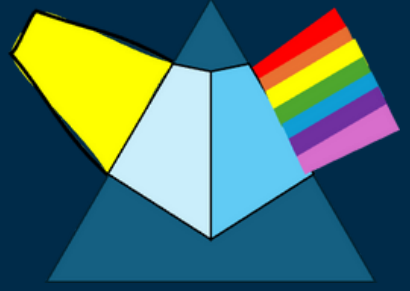
Develop cleaner and more efficient energy solutions

Improve engines, turbines, and industrial processes

→ WHAT DO WE NEED AND DO?



High-speed cameras to capture **flame dynamics**



Spectroscopy to analyze chemical **species**

Specialized **set-ups** to replicate **real-worlds** conditions

WHAT QUESTIONS DO WE WANT TO ANSWER?

There are many questions that need to be answered. These include:

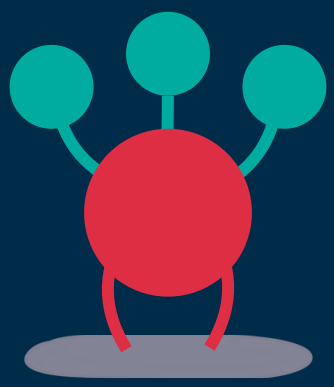
1. How do flames propagate?
2. What are the emission profiles of the different types of fuel?
3. What influence do temperature and pressure have on combustion?

INNOVATION IN THE EXPERIMENTAL FIELD

By combining new technologies, we are able to:

Analyze experimental data using AI techniques

Explore different types of combustion and conditions



Investigate alternative fuels

THE FUTURE OF EXPERIMENTS

Experiments will continue evolving with:

Digital Twins

+

Net-zero Fuels

WANT TO **KNOW MORE** ABOUT HOW COMBUSTION EXPERIMENTS ARE BEING **USED** WITHIN **ENCODING**?

Follow us and visit our website to find out!

https://encoding.ulb.be/

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This ENCODING project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101072779.