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# Experiments in Combustion

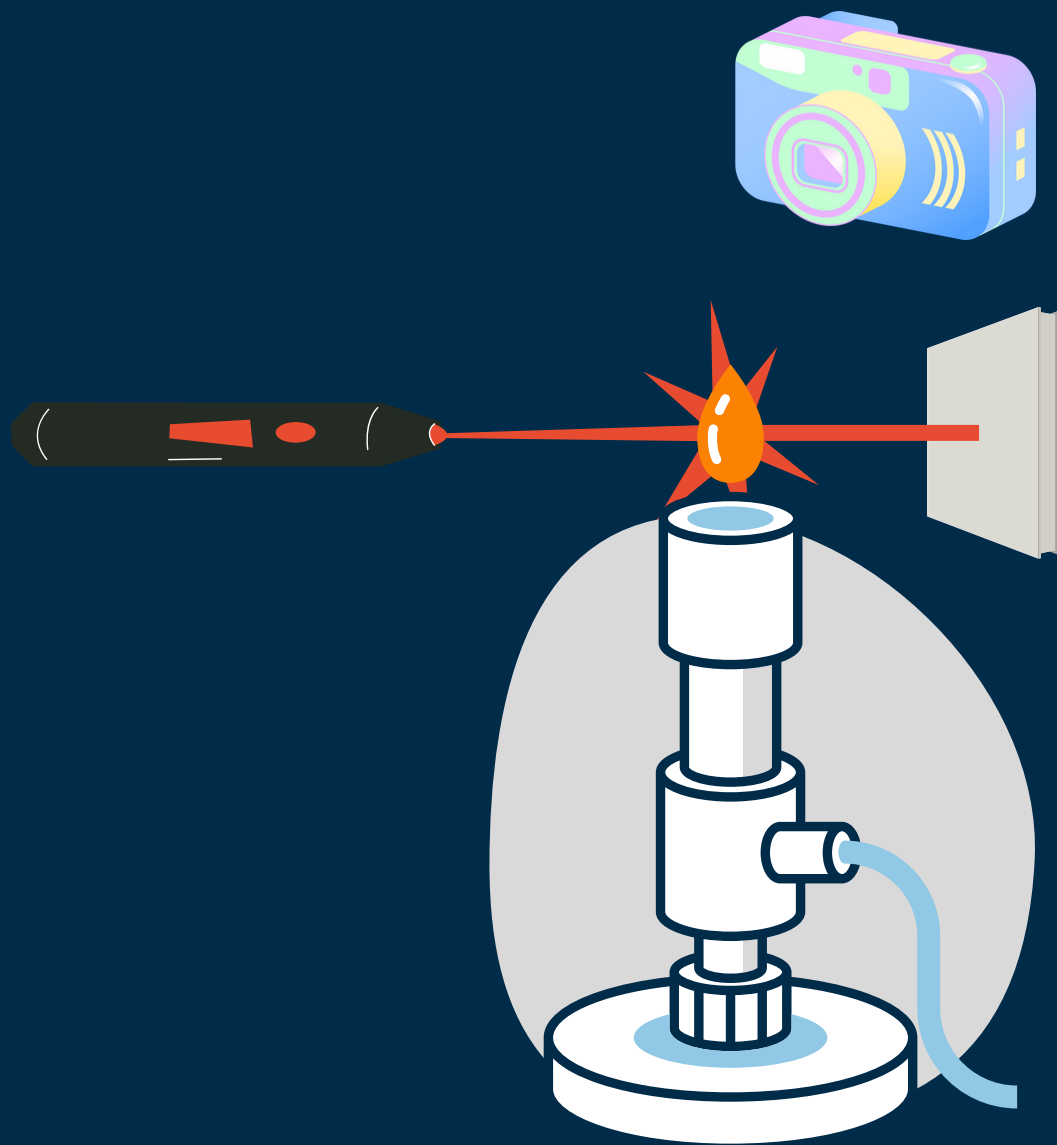
MAKING COMBUSTION  
CLEANER AND MORE  
EFFICIENT THROUGH  
RESEARCH



encoding

# → 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



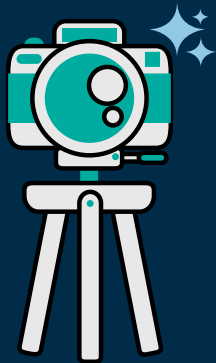
**Develop** cleaner and more efficient energy solutions



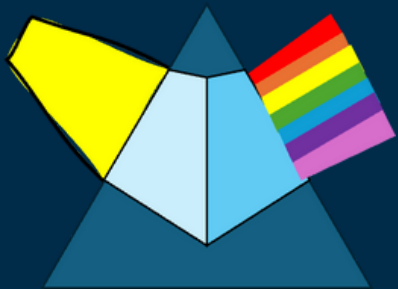
**Improve** engines, turbines, and industrial processes



# → 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

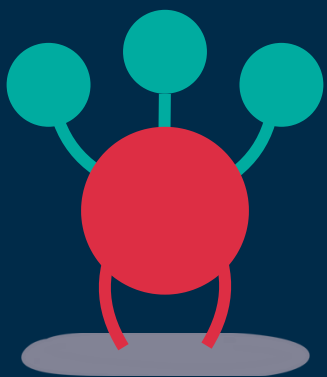
By combining new technologies, we are able to:



Analyze experimental data using AI techniques



Explore different types of combustion and conditions

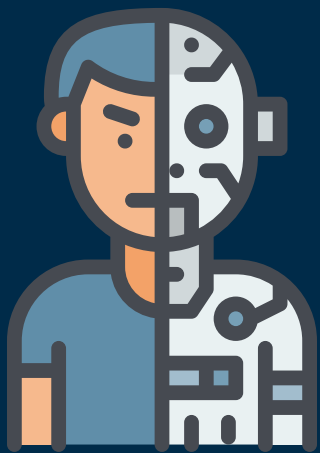


Investigate alternative fuels



# → THE FUTURE OF EXPERIMENTS

Experiments will continue evolving with:



Digital Twins



Net-zero Fuels



going →  
**ZERO**  
WASTE



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

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