

# PrISMa (ACT2)

Rahul Anantharaman, *SINTEF Energy Research*

# Background

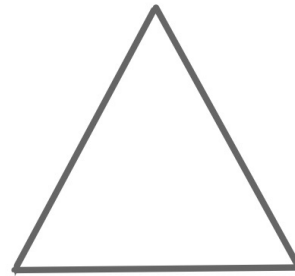
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Adsorption-based processes are attractive candidates for cost-efficient CO<sub>2</sub> capture

## Material Science

Very large number of novel materials under development:  
MOF, COF, MMO

## Materials design



Unit Op design

Process design

## Process Engineering

Several process configurations investigated to maximise the performance

Research needs towards sustainable production of fuels and chemicals (2019), ENERGY-X

### The Challenge:

*“There is currently no ability to quickly identify what processes and process conditions are optimal for a particular adsorbent to achieve the required specifications for a capture application”*

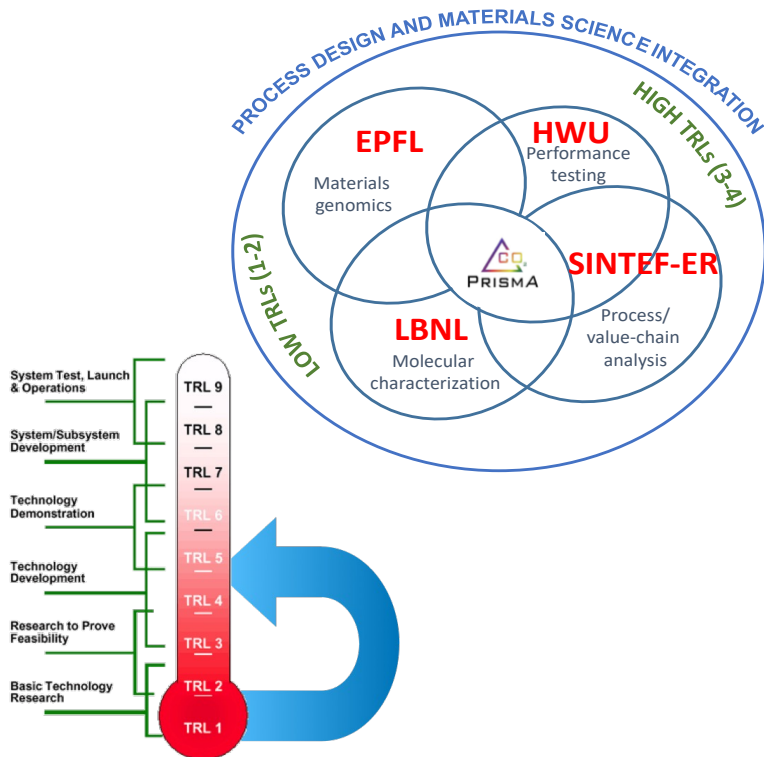
(Mission Innovation report)

# The PrISMa project

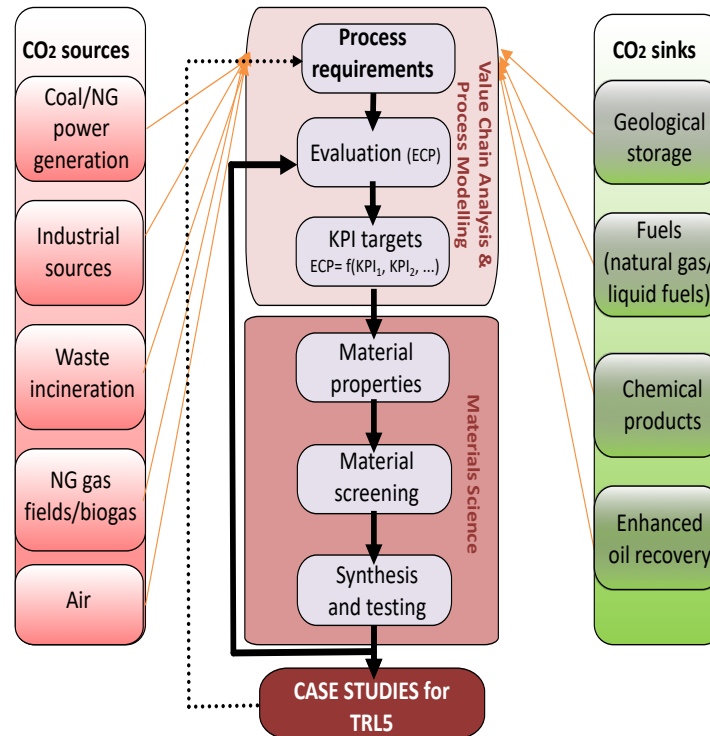
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## PrISMa: Process-Informed design of tailor-made Sorbent Materials for cost efficient carbon capture

**Aim:** To accelerate the transition of energy and industrial sectors to a low-carbon economy by developing a technology platform to tailor-make cost-efficient carbon capture solutions for a range of different CO<sub>2</sub> sources and CO<sub>2</sub> use/destination



### PrISMa platform



### Key Technical Outputs

- ❑ A **technology platform** that allows us to identify for a given source and target of CO<sub>2</sub> the optimal capture technology. This platform is based on a **methodology for systematic knowledge exchange between material science and process engineering**.
- ❑ A **set of case studies**, inspired by the interest of the national funding agencies and our industrial advisory board, **to bring the technology/material to the TRL5 level**.

# Acknowledgments

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*This PRISMa Project (No 299659) is funded through the ACT programme (Accelerating CCS Technologies, Horizon2020 Project No 294766). Financial contributions made from: Department for Business, Energy & Industrial Strategy (BEIS) together with extra funding from NERC and EPSRC Research Councils, United Kingdom; The Research Council of Norway, (RCN), Norway; Swiss Federal Office of Energy (SFOE), Switzerland; and US-Department of Energy (US-DOE), USA, are gratefully acknowledged. Additional financial support from TOTAL and Equinor, is also gratefully acknowledged.*

