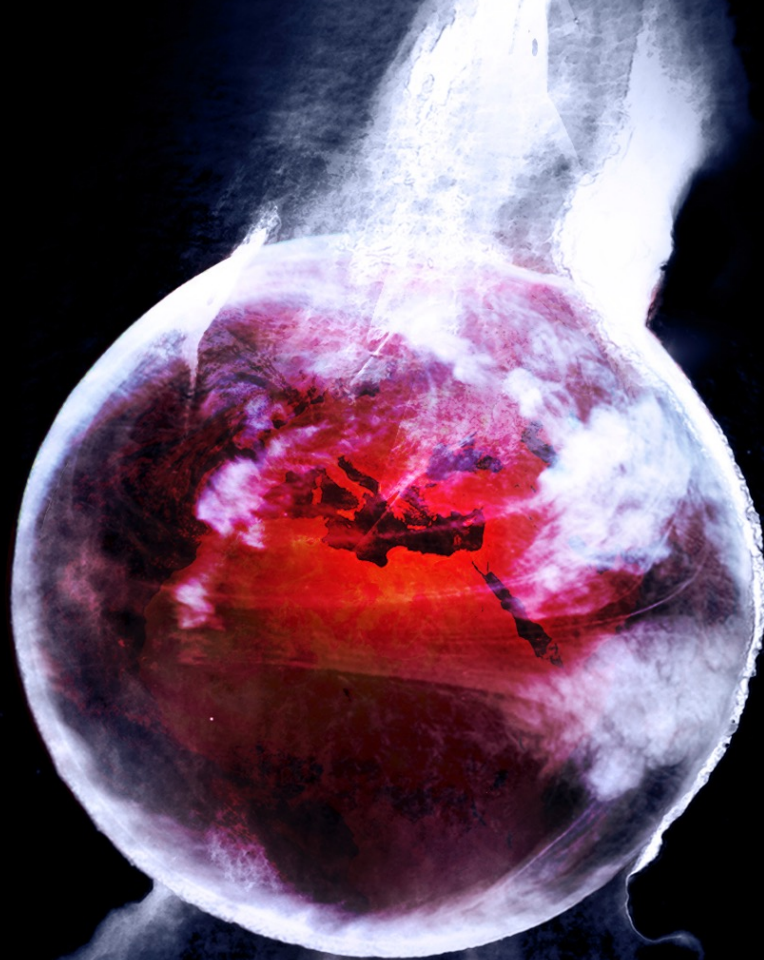


Process-Informed design of tailor-made Sorbent Materials
for energy efficient carbon capture (PrISMa)



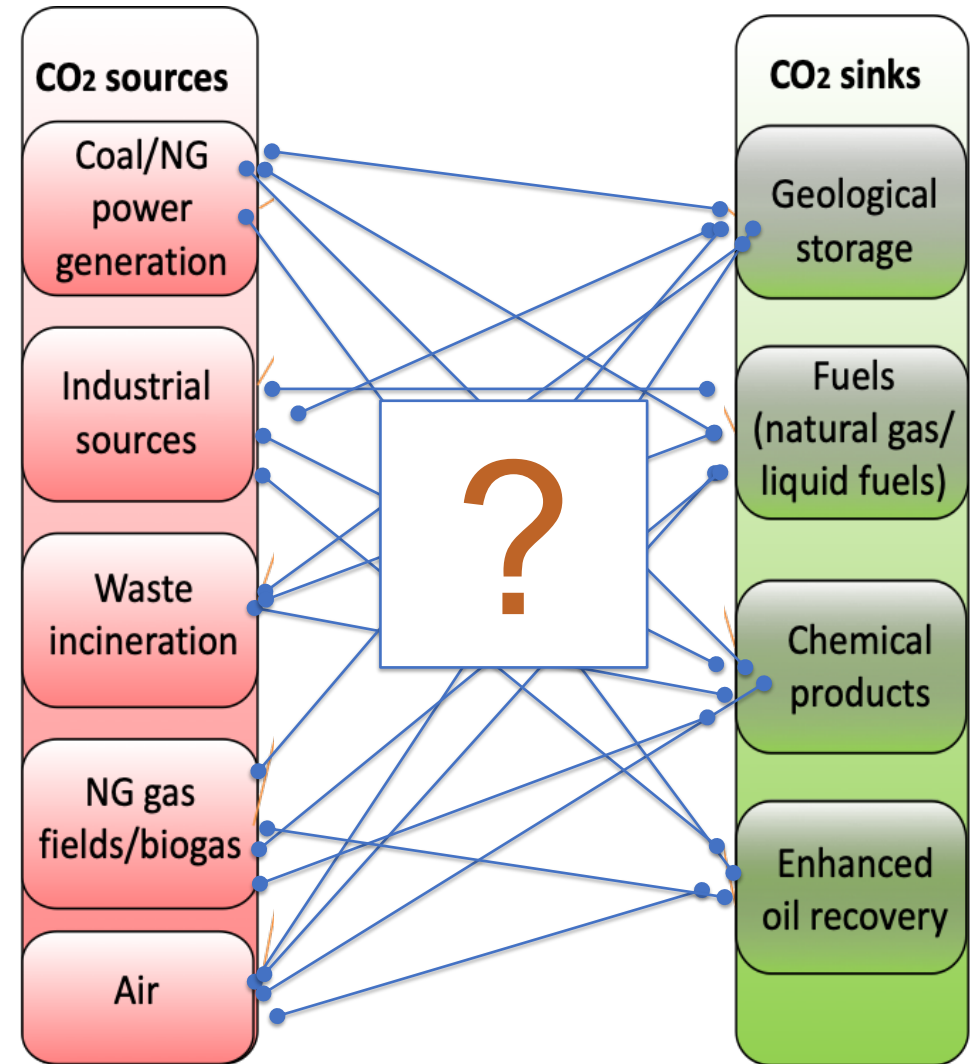
ACT Knowledge Sharing
Workshop
CCUS Conference
Rotterdam
9th June 2022



Prof Susana Garcia
Project Coordinator

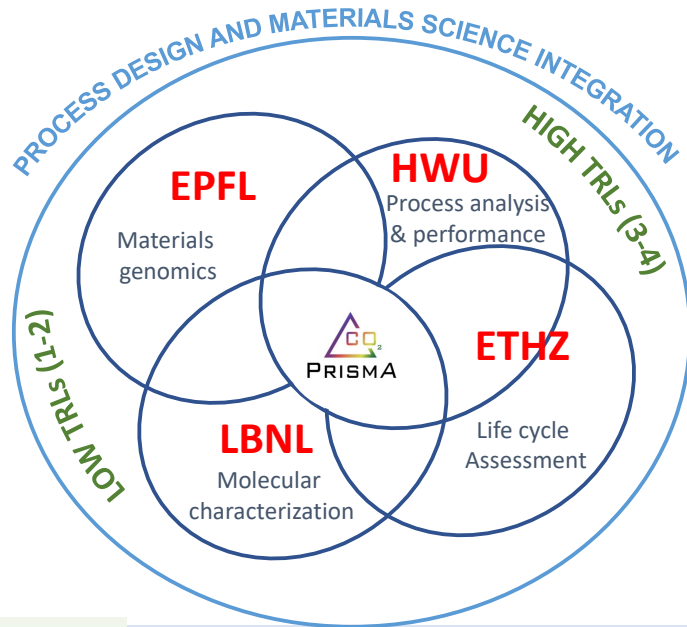


- **Vision:** We will go towards a world in which we need to capture all CO₂
 - **Sources:** emissions from different, big scale and small scale local sources
 - **Sinks:** the best local solutions (storage, chemical industry, synthetic fuels)
- For a **given source and sink of CO₂ what is the optimal separation?**
- PrISMa solid adsorbents
 - What is the optimal material?
 - What is the optimal technology (TSA, PSA, TVSA)?
 - Can this compete with alternatives (membranes, amines)?



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

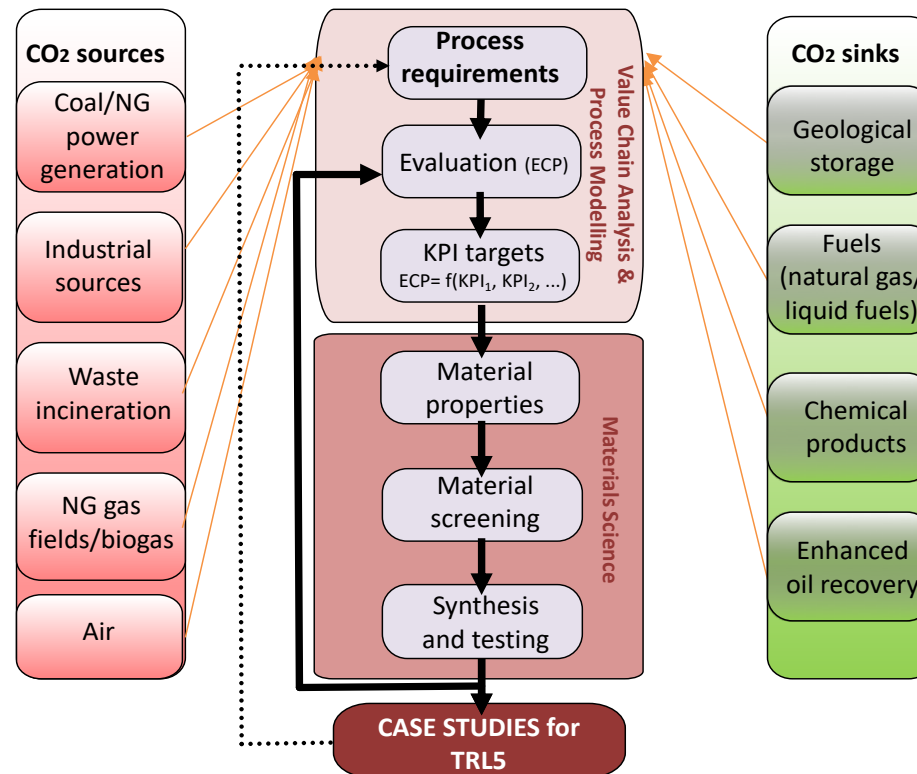
Aim: To accelerate the transition of energy and industrial sectors to a low-carbon economy by developing a technology platform to tailor-make cost-efficient carbon capture solutions for a range of different CO₂ sources and CO₂ use/destinations.



ACT-Funded Project
 €3.2M, 4 Research partners and
 13 Industrial Partners
 Duration: 3.5 years (Sept19-
 March23)



The PrISMa Platform

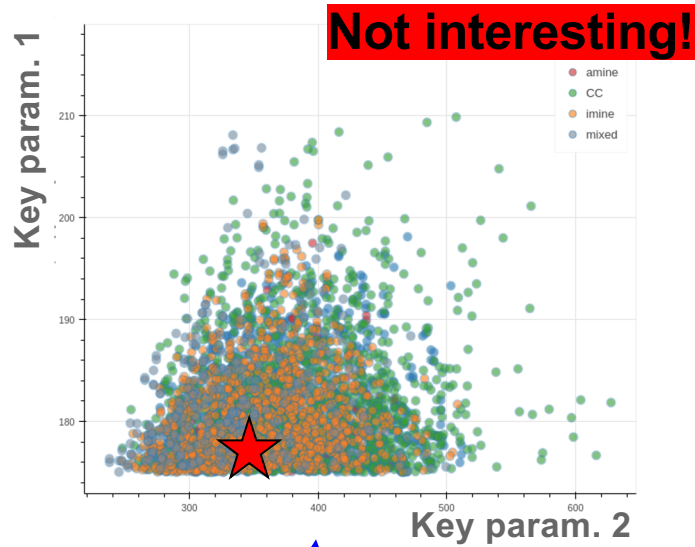


Key Technical Outputs

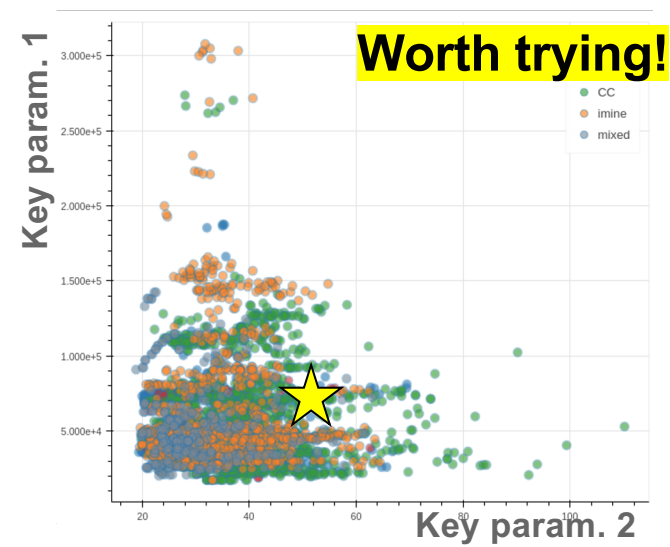
- ✓ A **technology platform** that allows us to identify for a given source and target of CO₂ the optimal capture technology. This platform is based on a **methodology for systematic knowledge exchange between material science and process engineering**.
- ✓ A **set of case studies**, inspired by the interest of the national funding agencies and our industrial advisory board, **to bring the technology/material to the TRL5 level**.

A matching platform for materials and applications

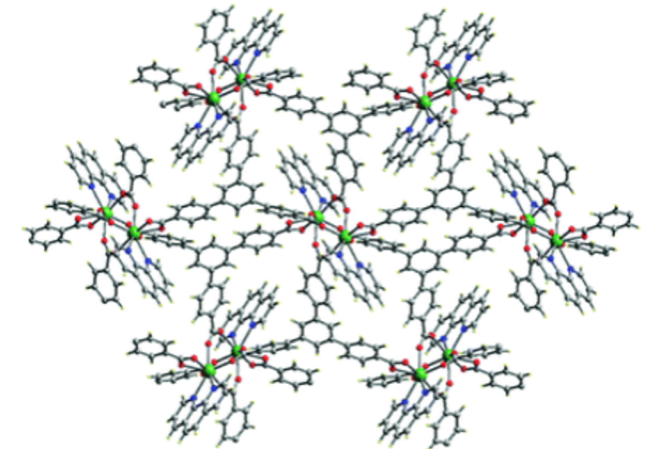
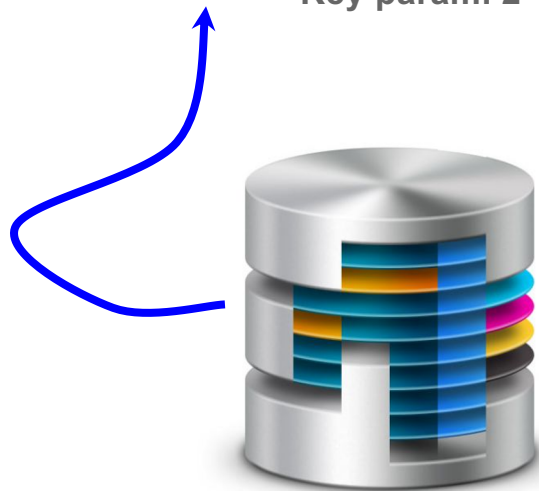
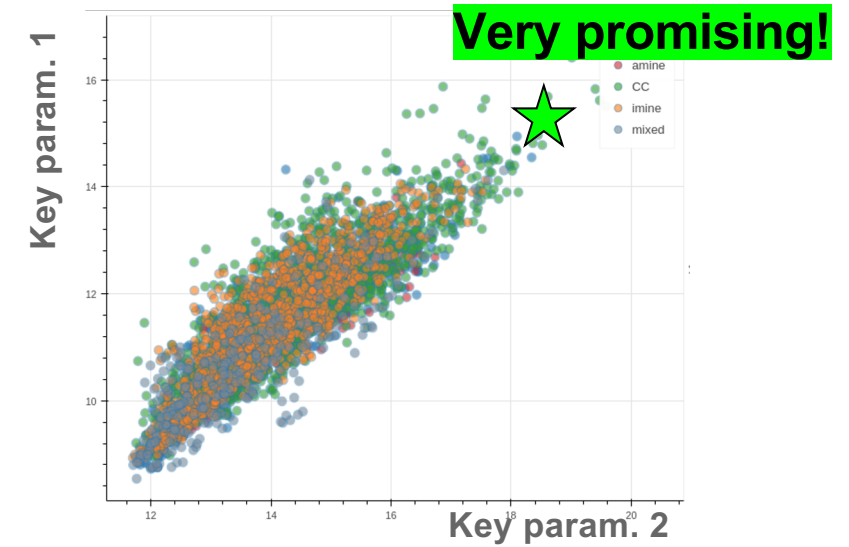
Separation #1 (source X, sink Y)



Separation #2 (source X, sink Y)



Separation #3 (source X, sink Y)



Acknowledgments

This PrISMa Project (No 299659) is funded through the ACT programme (Accelerating CCS Technologies, Horizon2020 Project No 294766). Financial contributions made from: BEIS together with extra funding from NERC and EPSRC, UK; RCN, Norway; SFOE, Switzerland and US-DOE, USA, are gratefully acknowledged. Additional financial support from TOTAL and Equinor, is also gratefully acknowledged.

<https://prisma.hw.ac.uk/>

