



New process for efficient CO₂ capture by innovative adsorbents based on modified carbon nanotubes and MOF materials modified carbon nanotubes



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Dear reader, the CARMOF project would like to share some updates with you in this newsletter. It contains information about the project content and the first steps taken in this project as well as related events.

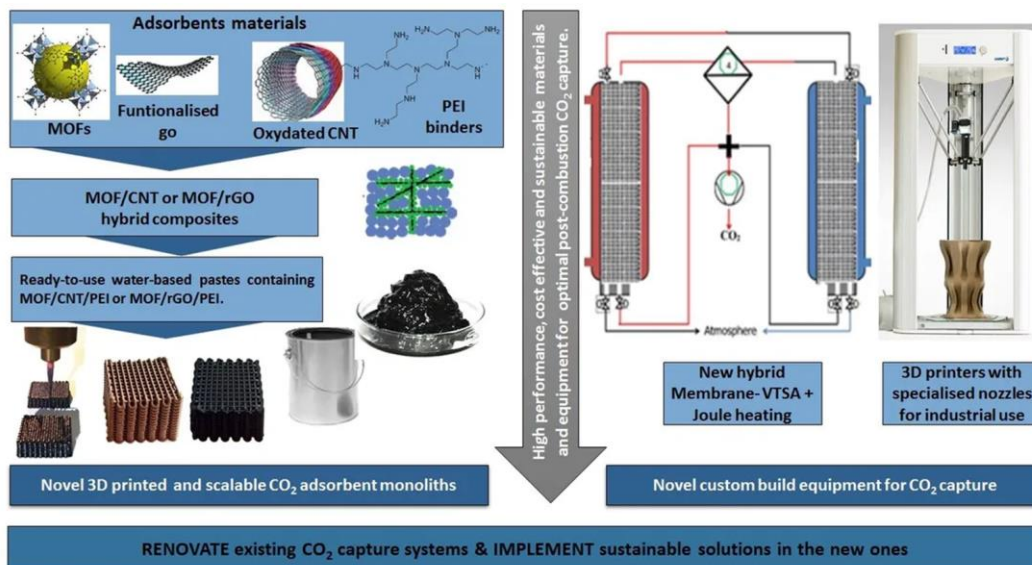
CARMOF Project

In light of the growing concern about CO₂ emissions, the CARMOF project develops Carbon Capture and Storage (CCS) technologies that make carbon capture efficient and cost-effective. The project is a collaborative effort of European industrial and academic partners to design innovative CO₂ adsorbing materials at nanoscale (such as carbon nanotubes, CNTs, and metal organic frameworks, MOFs) then 3D print them or make them into membranes for use in larger adsorbing units. It is the project's aim to deploy a successful technology for demonstration at industrial facilities, bringing it to a higher technology readiness level.



The project consortium consists of 15 partners from 9 different countries, representing the integral value chain. Having started in January 2018 and with a total duration of 48 months and a total budget of about 6 million €, the project is now in full swing; it is funded under the European Commission's Horizon 2020 research and innovation programme.

The CARMOF CO₂ sorbent and process concept



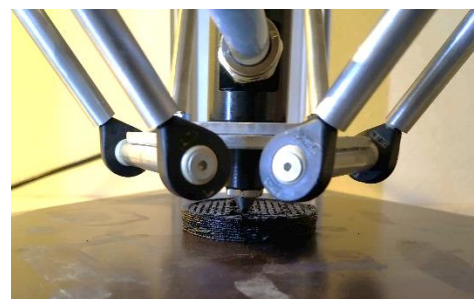
Latest consortium meeting held at Vito in Mol, Belgium

A productive CARMOF consortium meeting was held at Vito (Belgium) on 11-12 June 2019 to discuss the project progress and further planning.



Our first results

The first period of the project has focused on the (hybrid) solid sorbent development for CO₂ capture comprising functionalised Metal–Organic Frameworks (MOFs), Multi Walled Carbon nanotubes (MWCNT) and Reduced Graphene oxide (rGO) combined with a polymer of choice. There have already been promising results on the CO₂ adsorption capacity of preliminary formulations of 3D printing composite pastes. The diffusion paths through the composite are created by the presence of MWCNT which is believed to enable the gas transport to the active CO₂ adsorption sites. Other combinations of materials are being further explored and 3D printed.



Past events

Results of the CARMOF project were presented at several relevant events and conferences, e.g.:

- 1 & 2DM 2019 (January 2019, Tokyo)
- GraphIn2019 (February 2019, Madrid)
- CO₂ REUSE 2019 conference (April 2019, Berlin)
- CHEMUK 2019 Expo (May 2019, Harrogate)
- Advanced Nanomaterials Conference 2019 (July 2019, Aveiro)

To learn more about past and future events, please visit the events section on our [website](#).

Want to know more about the project?



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