

Biocarbon based Polymers for Sustainable Material Development

Deliverable D4.3

Network-wide training events reports – R2



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Executive Summary

This document, D4.3 Network-wide training events reports-R2 is a deliverable of the **D-Carbonize** Project, which is funded by the European Union's Horizon Europe Programme under Grant Agreement No. 101073223. The document describes the activities carried out during the second **D-Carbonize** Workshop organized by UICR-CNRS (14-15 October, Rennes, France).

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1. Introduction

The main training objective of **D-Carbonize** is to create a new generation of scientists that represent the future leaders in the design and implementation of new and improved functional materials enabled by renewable and sustainable carbon feedstock and a circular vision, thereby revolutionizing the plastic production industry. This will be supported by workshops and schools on both scientific and soft skills facilitated by all members of the consortium.

The second **D-Carbonize** Workshop (WS2) dealt with advanced and applied sciences related to CO₂ transformations, monomer and polymer synthesis and processing. Furthermore, it was provided knowledge about implementing FAIR and responsible data management, perception biases and representations in research and essential guidelines for public communication.

It was mainly a face-to-face event, despite a few partners virtual participation. For those that were not able to attend in person (either due to health problems or tight work agendas) a zoom link was provided, and they were able to virtually follow the whole event and fully participate.

2. Second Workshop Overview

2.1 Objectives

The second **D-Carbonize** Workshop (WS2) provided advanced scientific and soft skills training focused on polymer synthesis and catalysis for CO₂ conversion, providing an excellent opportunity for doctoral candidates to present their project advancements, be further involved in networking with experts in the field, and gain new knowledge from the diverse sessions. Additionally, the workshop also offered the opportunity, to all members of the consortium, to strengthen their relationship (with a special emphasis on the DCs) and foster extensive collaboration.

2.2 Organization and Results

The second **D-Carbonize** Workshop was organized by the Institut des Sciences Chimiques de Rennes (UISCR-CNRS), University of Rennes and took place at the UISCR facilities in Rennes (France). During this second workshop, the second Supervisory Board meeting also took place. Doctoral Candidate's (DCs), consortium partners (beneficiaries and associated partners) and EAB (External Advisory Board) members participated in the two-days event. Participant's list can be consulted in Annex II of this document.



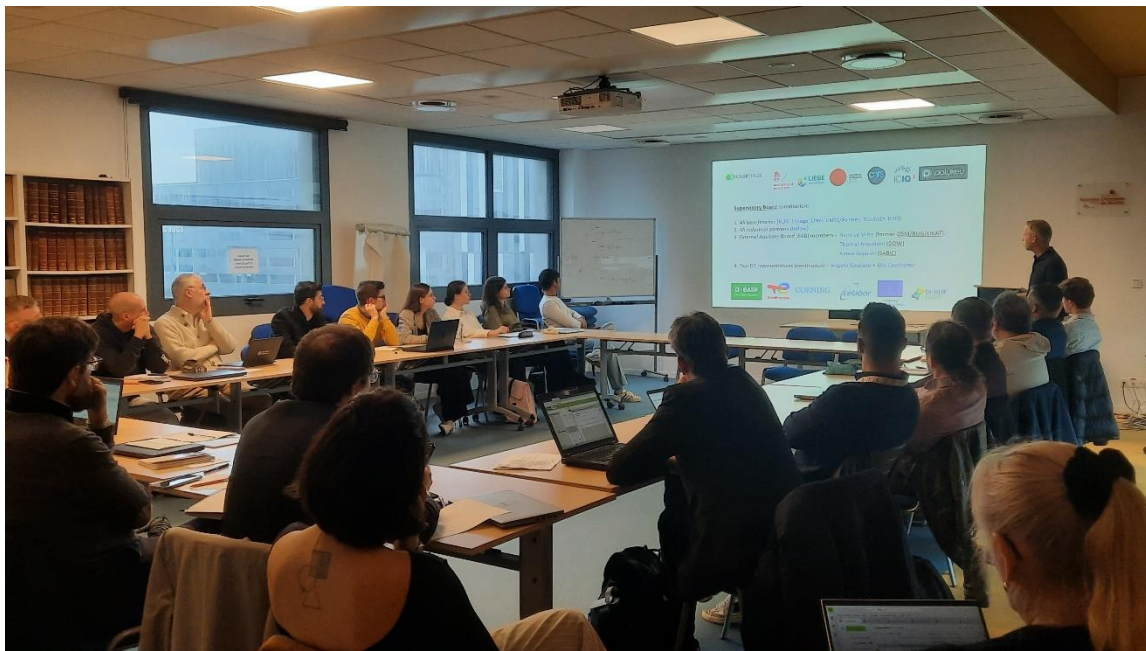
D-Carbonize Consortium members

The programme included several sessions, comprising scientific and soft skills training (see Annex I. Workshop Agenda):

- Novel Polymeric Materials by Extrusion (Prof. Francesco Picchioni)
- Creation of Functional Monomers from Carbon Dioxide (Prof. Arjan Kleij)
- Implementing FAIR and Responsible Data Management (Damien Belvèze)
- The Catalytic Conversion of CO₂ in a Circular Carbon Economy (Dr. Thibault Cantat)
- Essential tips for public speaking & D-Carbonize Dissemination & Communication (Arnau Jordà)
- Perception biases and representations in research (Florence Poirier)

Besides the training sessions, the first day, the doctoral candidates presented their ongoing research, their main individual project goals and results, and the challenges they are facing. Each individual project presentation was followed by a Q&A session and the consortium discussion on the results obtained and suggested future steps.

The workshop opened with a welcome from the project coordinator Arjan Kleij (ICIQ), who gave an overview of the D-Carbonize project and outlined its ambitious goals: to foster research that aims to minimize carbon emissions through innovative materials and processes.



D-Carbonize Scientific Coordinator

Prof. Francesco Picchioni offered a session on “Novel Polymeric Materials by Extrusion”. Picchioni’s presentation showed an overview on new approaches in polymer production, emphasizing the use of extrusion methods to create more sustainable and efficient materials. Prof. Picchioni is a full professor leading the Product Technology group at the University of Groningen (RUG) (The Netherlands) and his current research interests are related to polymer processing and modification, in particular related to sustainability and recycling.



Prof. Francesco Picchioni

Following this session, the D-Carbonize doctoral candidates (DCs) presented their ongoing research, their main project goals and the challenges they face.



DCs from left to right: [Angelo Scopano](#) (DC5), [Natalia Kulbacka](#) (DC2)



DCs from left to right: [Florian Barbaz](#) (DC4), [Enrico Lanaro](#) (DC1) and [Lilas Aubel](#) (DC3)



DCs from left to right: [Hussein Tabaja](#) (DC7), [Sara Faoro](#) (DC12), [Elia Cecchetto](#) (DC10)



DCs from left to right: [Giovanni Berluti](#) (DC6), [Owais Sheikh](#) (DC9), [Nishant Chaudhary](#) (DC8)

The afternoon continued with a keynote presentation by Arjan Kleij (D-Carbonize Coordinator), to discuss “The Creation of Functional Monomers from Carbon Dioxide”. Kleij demonstrated how CO_2 can be transformed from a waste product into a valuable resource in the chemical industry, highlighting the potential of catalysis as a key enabling technology for minimizing carbon emissions. Prof. Arjan Kleij is a ICREA Professor and Group Leader at ICIQ (Spain) and works in the area of CO_2 valorization catalysis, the development of new

reactivity using organic carbonates as modular precursors towards new engineering polymers, and the use of renewable compounds and monomers in stereoselective transformations and polymer applications.



Prof. Arjan Kleij

The final talk of the day was delivered by Damien Belvèze, who spoke on “FAIR and Responsible Data Management.” Belvèze provided practical insights into how researchers can ensure their data is Findable, Accessible, Interoperable, and Reusable (FAIR). Damien Belvèze is a Librarian at the Research Data/Library Services at the University of Rennes – ARDoISE data hub, France.



Damien Belvèze

The second day began with Dr. Thibault Cantat, who gave a talk entitled “The Catalytic Conversion of CO₂ in a Circular Carbon Economy”. Thibault Cantat is a research director and senior fellow at the CEA (France) and leads a group working on the activation and catalytic conversion of polymers and small molecules such as CO₂ and CO, using molecular systems, including organometallic complexes. His research aims to develop new catalytic reactions to effectively reduce CO₂ and plastic waste, in a circular economy approach.



Dr. Thibault Cantat

Following this, the Supervisory Board members and the Management Team from ICIQ had a meeting to present the progress of the D-Carbonize project and plan the next steps. This session provided an opportunity to reflect on the achievements so far and to strategize future accomplishments.

The event continued with a session on public speaking and communication strategies led by Arnau Jordà (ICIQ). His talk, titled “Engage and inspire: essential tips for public speaking”, provided attendees advice on how to effectively communicate their research, both within an academic context and towards a broader audience. Arnau Jordà is the Project Communications Officer at ICIQ and is responsible for the institute’s communication of EU-funded research projects.

In addition, the session included an update on the D-Carbonize Dissemination and Communication Plan and future activities.



Mr. Arnau Jordà

The workshop concluded with a session led by Florence Poirier (CERREV, University of Caen). In her presentation, titled “Perception Biases and Representations in Climate Change Research: Understanding and Overcoming”, Poirier explored how societal biases can shape the perception of climate research.

2.3 Documentation

DCs and consortium partners will have full access to all the presentations and files related to the WS2 through the project [intranet](#).

Annex I. Workshop Agenda

WS2 – Workshop 2: Polymer Synthesis



D-Carbonize WS2 Agenda

Institut des Sciences Chimiques de Rennes (UISCR) – CNRS University of Rennes
 (Campus de Beaulieu, Building 10B, Room 160)
 263, Avenue du Général Leclerc – 35042 – Rennes (France)
 14 – 15 October 2024

Monday, 14 October 2024

Time	Topic	Presenter
09:00 – 09:30	Welcome and Project Overview	Arjan Kleij (ICIQ)
09:30 – 10:30	Novel polymeric materials by extrusion	Francesco Picchioni (RUG)
10:30 – 11:00	Coffee break	
11:00 – 13:00	Doctoral Candidates (DCs) scientific presentations (20 min/each)	All DCs
13:00 – 14:00	Lunch	
14:00 – 16:00	Doctoral Candidates (DCs) scientific presentations (20 min/each)	All DCs
16:00 – 16:30	Coffee break	
16:30 – 17:30	Creation of Functional Monomers from Carbon Dioxide	Arjan Kleij (ICIQ)
17:30 – 18:30	Implementing FAIR and Responsible Data Management: The Importance of a Data & Software Management Plan for your Research Project	Damien Belveze (Research Data / Library Services Univ Rennes- ARDoISE data hub)
19:30	Dinner (La Taverne)	

Tuesday, 15 October 2024

Time	Topic	Presenter
09:00 – 10:30	The catalytic conversion of CO ₂ in a circular carbon economy	Thibault Cantat (CEA)
10:30 – 11:00	Coffee break	
11:00 – 12:30	Engage and inspire: essential tips for public speaking / D-Carbonize communication	Arnau Jordà (ICIQ)
12:30 – 13:15	Supervisory Board & Management	SB members, ICIQ Management Team
13:15 – 14:30	Lunch	
14:30 – 16:00	Perception biases & representations in climate change research: understanding and overcoming	Florence Poirier (CERREVE - Centre de Recherche Risques & Vulnérabilités (Univ. Caen))
16:00	End of the meeting	



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Annex II. List of Participants

The second **D-Carbonize** Workshop was attended by the DCs and the consortium partners.

D-Carbonize DCs:

- Enrico Lanaro
- Natalia Kulbacka
- Lilas Aubel
- Florian Barbaz
- Angelo Scopano
- Giovanni Berluti
- Hussein Tabaja
- Nishant Chaudhary
- Owais Sheikh Ahmed
- Elia Cecchetto
- Sara Faoro

Consortium Partners:

- Arjan Kleij (ICIQ)
- Eva Alcázar (ICIQ)
- Anna Banet (ICIQ)
- Arnau Jordà (ICIQ)
- Laia Plana (ICIQ)
- Christophe Detrembleur (ULIEGE) (*online*)
- Bruno Grignard (ULIEGE) (*online*)
- Paolo Pescarmona (RUG) (*online*)
- Stephen K. Hashmi (UHEI)
- Jean-François Carpentier (CNRS)
- Sophie Guillaume (CNRS)
- Coralie Jehanno (POLYKEY)
- Thomas Schaub (BASF)
- Valentin Puchelle (TOTAL Energies)
- Jean-Michel Thomassin (CELABOR) (*online*)

Speakers:

- Francesco Picchioni (RUG)
- Arjan Kleij (ICIQ)
- Damien Belvèze (U. Rennes)
- Thibault Cantat (CEA)
- Arnau Jordà (ICIQ)
- Florence Poirier (U. Caen)

External Advisory Board:

- Johannes G. de Vries (LIKAT)
- Thomas Mosciatti (DOW)

- Aarón David Bojarski (SABIC)