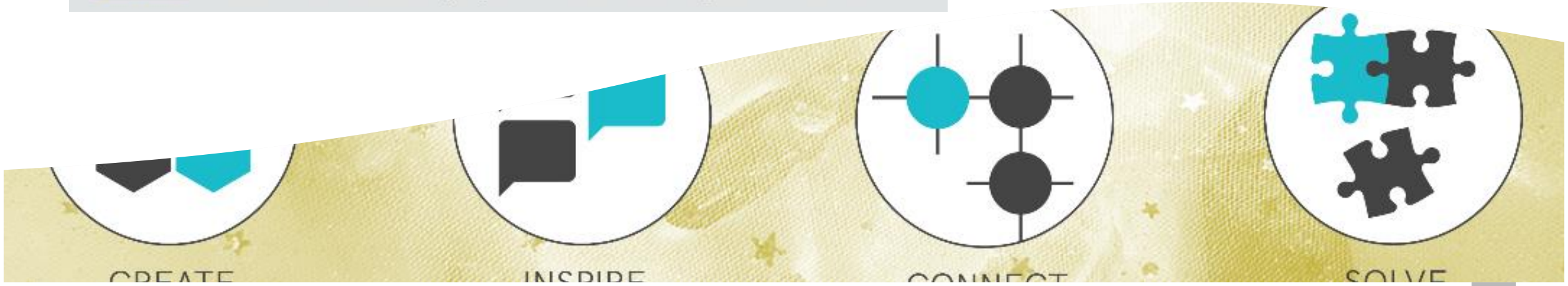
Sc-CO2 and NADES assisted extraction of impurities from polymer melts

Kevin Moser, Elke Van De Walle, Irma Mikonsaari
Fraunhofer Institute for Chemical Technology / Centexbel-VKC

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 820477

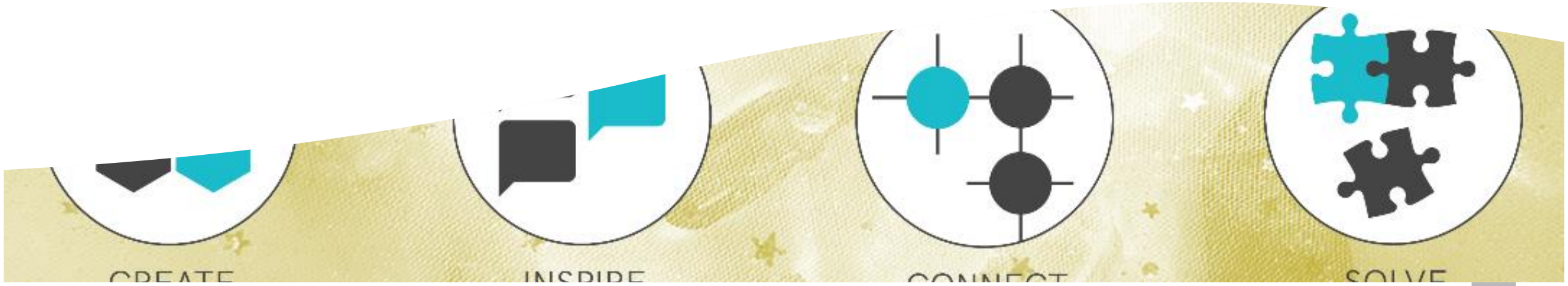


CREAToR

Collection of raw materials, removal of flame retardants and reuse of secondary raw materials

- All polymer materials contain addtives to functionalize them
- In the past various harzardous substances were used, which are not compliant to the legal framework anymore

  → no recycling of these materials is possible, they are incinerated at specific conditions
- Several bromine containing flame retardants are part of the today prohibited materials



CREAToR

CREAToR aims to remove the hazardous, bromine containing legacy additive from the polymer waste stream (WEEE, C&DW and aeronautic waste)

Waste

WEEE, C&D and aeronautic waste streams

Identification and sorting

Sorting with LIBS technology

Removal of contaminant

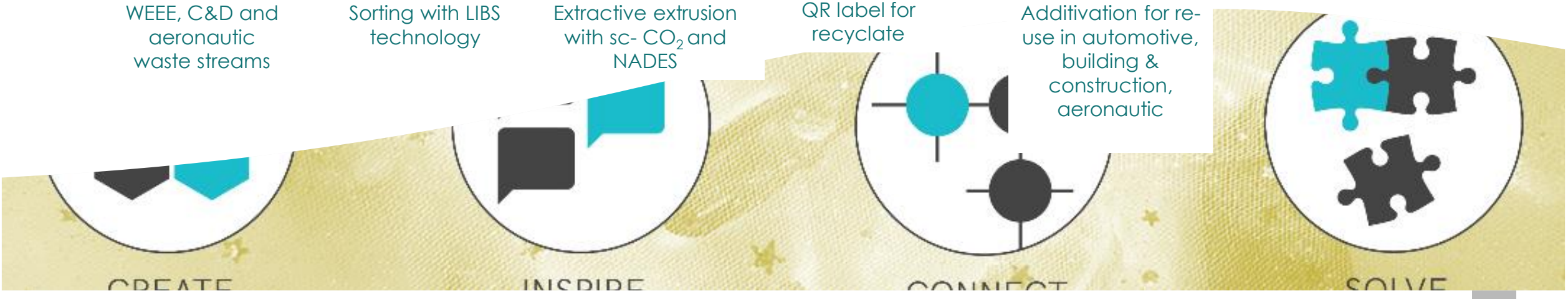
Extractive extrusion with sc- CO_2 and NADES

Labelling

QR label for recyclate

Reuse

Additivation for re-use in automotive, building & construction, aeronautic

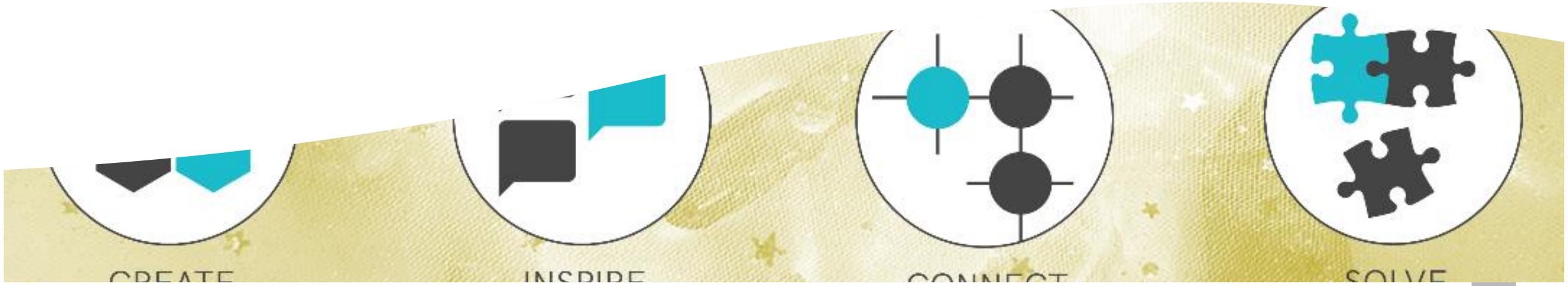


CREAToR

Poster: sc-CO_2 and NADES assisted extraction of impurities from polymer melts

On our poster we present

- Pilot lines installed at Centexbel and Fraunhofer ICT for extraction
- Explain our methodology for extraction with sc-CO2 and NADES
- Compare extraction efficiency
    - Batch extraction
    - Continuous extractive extrusion



CONNECT INSPIRE SOLVE CREATE

Thank you!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 820477

Isabel De Schrijver
Centexbel-VKC

E-mail ids@centexbel.be

Kevin Moser
Fraunhofer Institute for Chemical Technology

E-mail kevin.moser@ict.fraunhofer.de