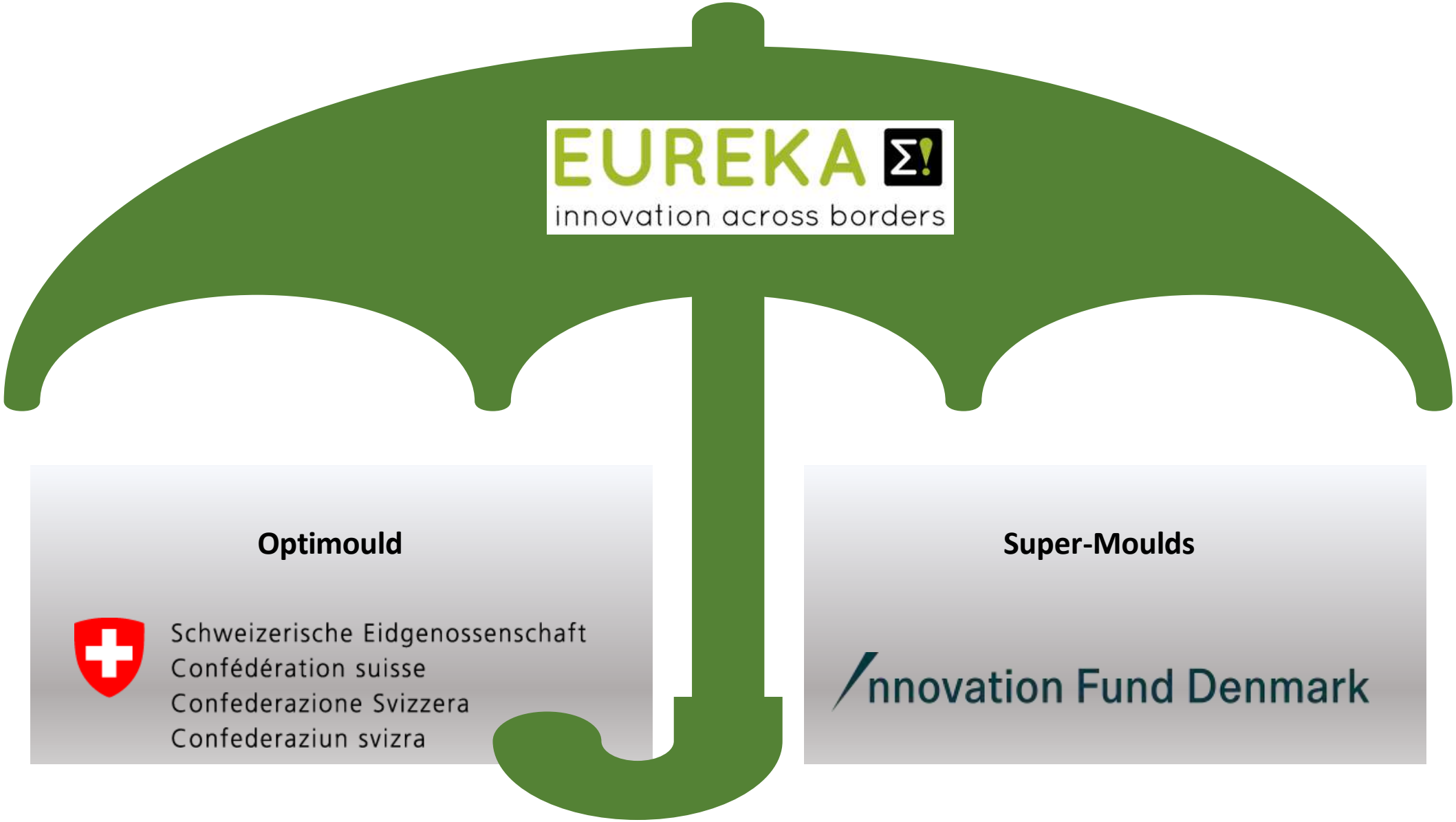
Industriens Hus, 21st of January 2020

This work is partly funded by the Innovation Fund Denmark (IFD) under File No. 6151-00004B and Innosuisse – Swiss Innovation Agency, under the umbrella of the EUREKA programme, EUREKA No. E!11229.


EUREKA
innovation across borders
Optimould
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Super-Moulds
Innovation Fund Denmark

Project aim

Obtain a better understanding of the factors that influence the demoulding of parts in plastic injection moulding.

Special emphasis is on the influence of surface coating and surface morphology.

Development of new surface treatments resulting in:

Increased process stability

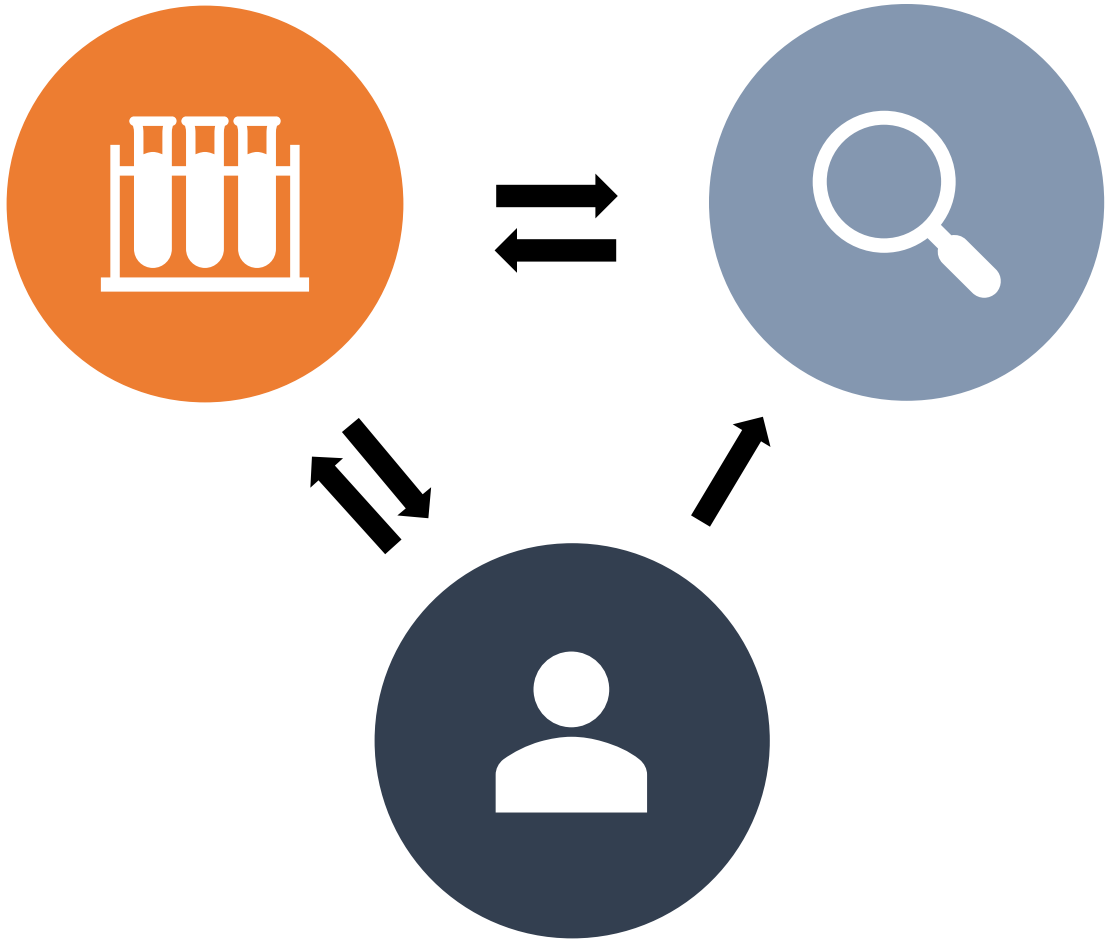
Improved product quality

Reduced cycle time

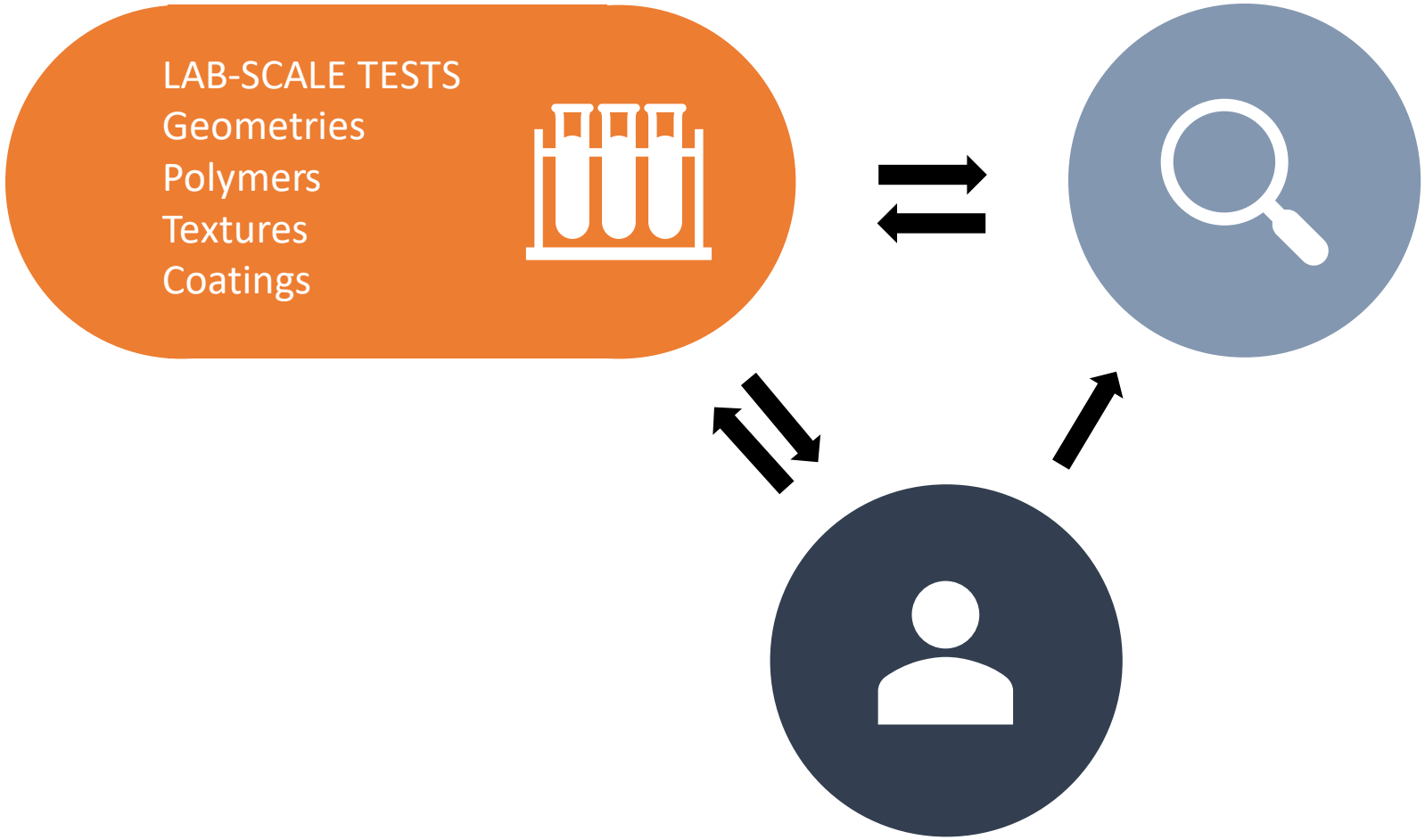
Increased mould lifetime

Elimination of slip agents

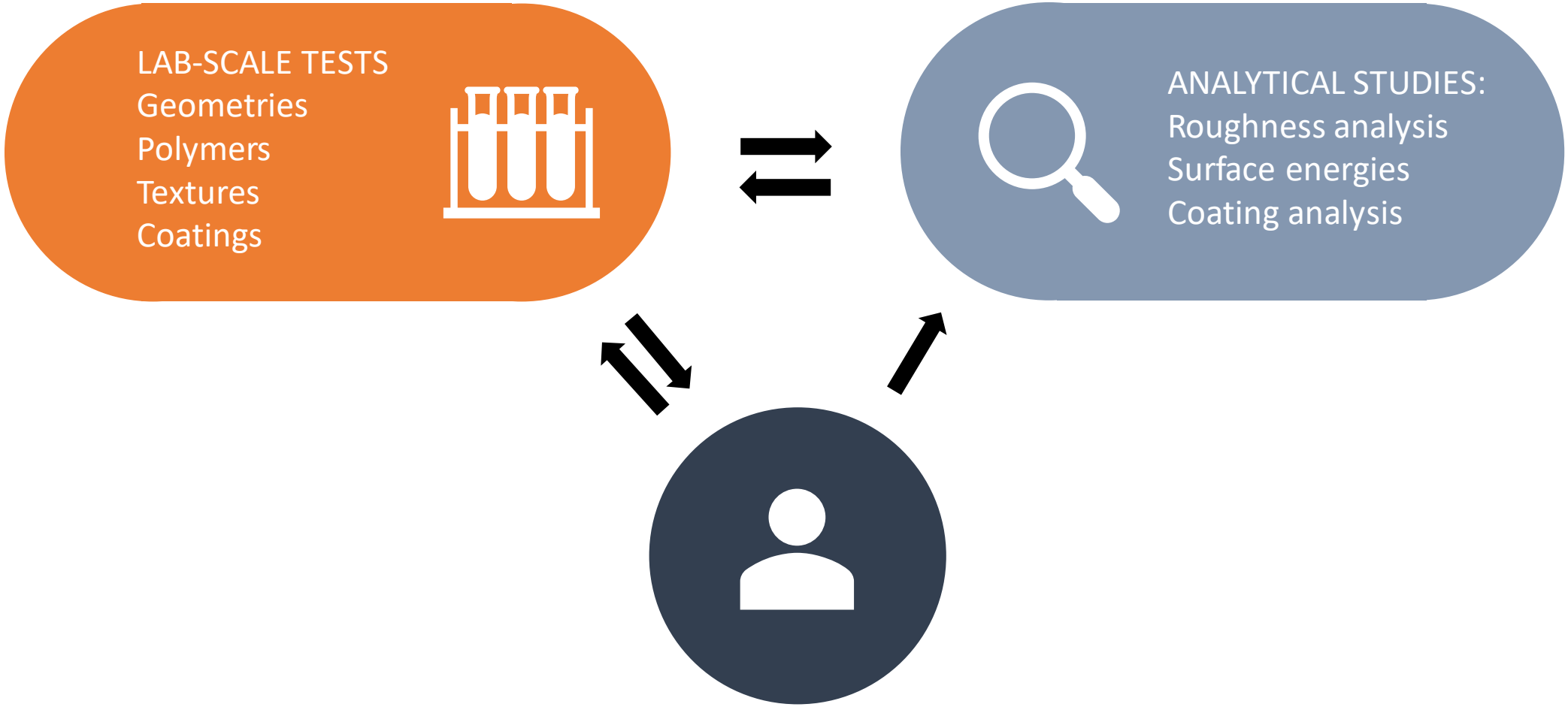
Project overview



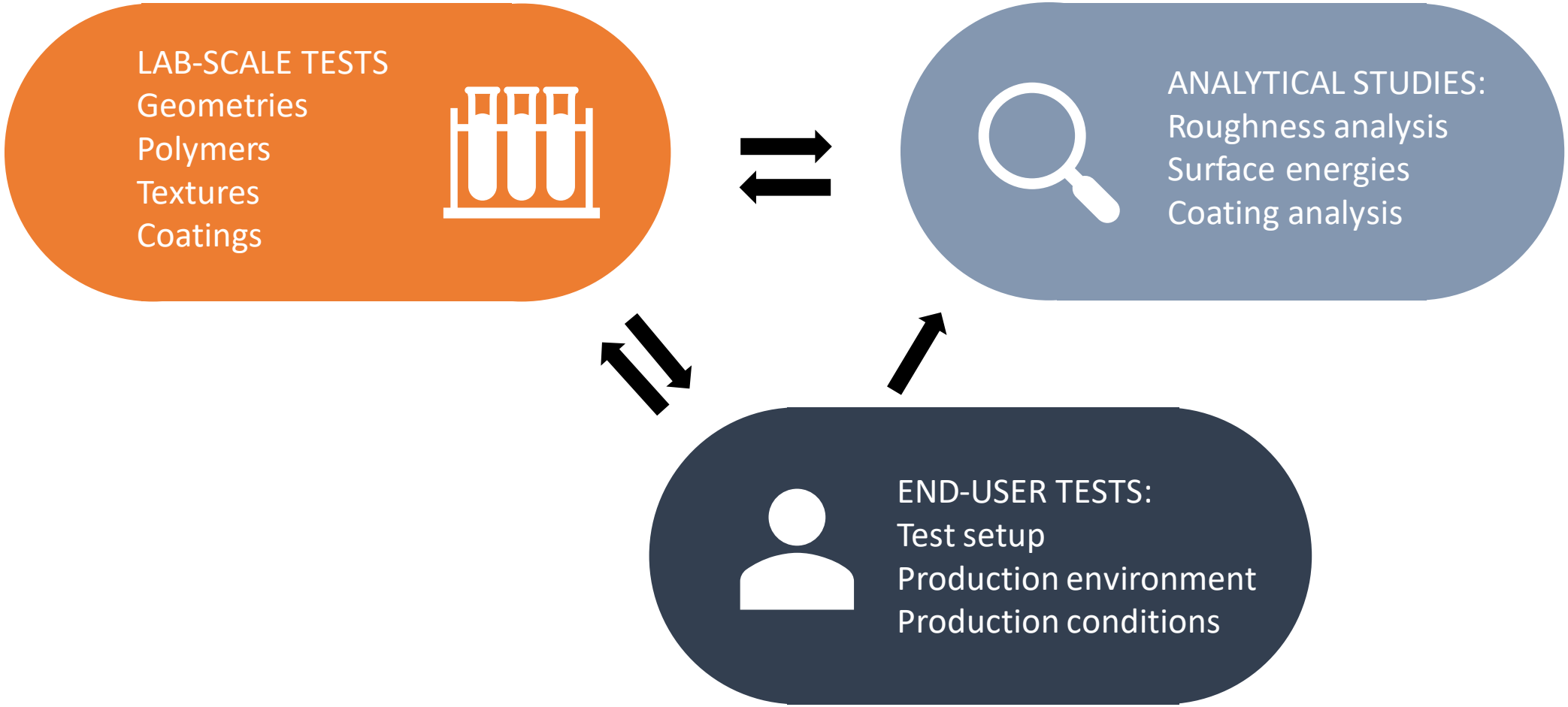
Project overview



Project overview



Project overview



Based on previous Eurostars project

- Eurostars: E7412
- January 2013 – June 2016
- Partners:
  - **iRAP (CH)**
  - **Winther Mould Technology A/S (DK)**
  - **Novo Nordisk A/S (DK)**
  - **Danish Technological Institute (DK)**
  - Proinyec (ES)
  - IK4-Tekniker (ES)

- Conception of test setup
- Screening of coatings and blasting

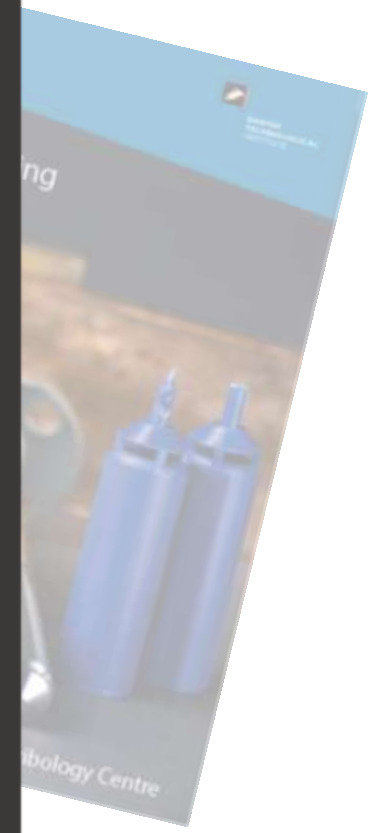
Based on

- Eurostars: E741
- January 2013 –
- Partners:
  - **iRAP (CH)**
  - **Winther Mou**
  - **Novo Nordisk**
  - **Danish Techno**
  - Proinyec (ES)
  - IK4-Tekniker (E

- Conception of t
- Screening of co

Super moulds

- The **ejection force** is still the parameter of choice for the scientific studies
- **Systematisation** of the work with coatings, structures and ejection force
- Increased focus on **understanding** why specific solutions are better than others
- More partners – **broader perspective**



Project partners along the entire value chain

- Tool maker: Winther Mould Technology A/S
- Metrology institute: Danish Fundamental Metrology
- Surface modifiers: AgieCharmilles SA and AgieCharmilles New Technologies SA, Georg Fischer Machining Solutions

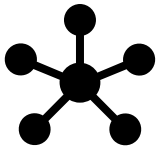
  Tribology Centre, Danish Technological Institute
- Polymer supplier: DuPont
- University: Institute for applied plastics research, School of Engineering and Architecture of Fribourg
- End-users: Novo Nordisk A/S

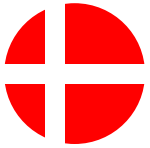
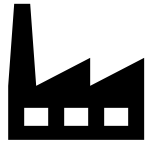
  Michael Lundbech A/S

  SP Moulding A/S

  Gibo Plast A/S
- Trade organisation: Danish Plastics Federation





Preliminary results…

- Project started in January 2017
- Closing by the end of 2020 – i.e. one year left

- Receptive to suggestions and viewpoints
- Looking for additional end-user challenges

Program

Super-Moulds dissemination seminar, January 21st, 2020

12:45 – 13:00	**Registration**	
13:00 – 13:10	Welcome to the Super Moulds seminar	**Sascha Louring** Danish Technological Institute
13:10 – 13:40	Towards systematic lab scale testing for evaluating the potential effect of surface treatments on the productivity of plastic pieces	**Stefan Hengsberger** Institute of Applied Plastics Research, iRAP (CH)
13:40 – 14:00	The exquisite art of tailoring coatings	**Kristian Rechendorff** Danish Technological Institute, Tribology Centre
14:00 – 14:15	Coffee Break	
14:15 – 14:40	The use of EDM (Electrical Discharge Machining) for mould texturing	**Umang Maradia** AgieCharmilles SA - Georg Fischer Machining Solutions (CH)
14:40 – 15:05	Laser texturing for mould core functionalization	**Alexis Demierre** AgieCharmilles New Technologies SA - Georg Fischer Machining Solutions (CH)
15:05 – 15:20	Coffee Break	
15:20 – 15:50	Elucidating the dependence between ejection force and core geometry and surface texture in injection moulding	**Poul Erik Hansen** Danish Fundamental Metrology
15:50 – 16:20	The way to a successful injection moulding production	**Michael Lundbech** Michael Lundbech A/S
16:20 – 16:30	Coffee Break	
16:30 – 17:00	Round table discussion on demoulding topics	**Sascha Louring** Danish Technological Institute
17:00 –	Seminar wrap up	**Sascha Louring** Danish Technological Institute

Super moulds

Enjoy the seminar!

- Networking
- Interaction with experts
- Evaluation of actual problems