

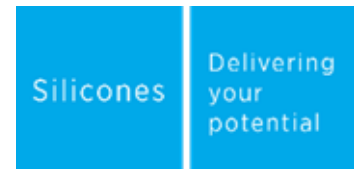
# Key Challenges for Silicones Processes and Materials

Work Programme H2020 (2018-2020)

## Topics of Interest / (NMBP/FOF/SPIRE)

DT-NMBP-09-2018: Accelerating the uptake of materials modelling software (IA)

DT-NMBP-19-2019: Advanced Materials for additive Manufacturing (IA)



## WS.3 NMBP for HealthCare & Biotechnology & Cooperation with Asia /USA

EU Brokerage Event on Kets in Horizon 2020

Strasbourg, 17th October 2017

# The Elkem Group: with integrated value chains

Elkem AS and the Silicones value chain:  
Including Xinghuo and Yongdeng

Employees: 6200  
Revenue: 1,900 MEUR

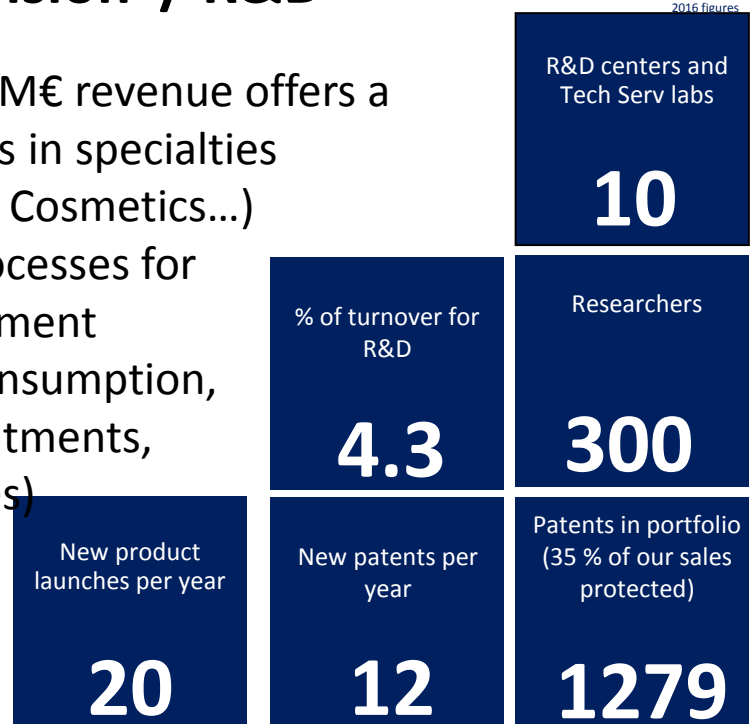


## The Elkem Silicones Division / R&D



- Elkem Silicones 550 M€ revenue offers a full range of silicones in specialties (Healthcare, Energy, Cosmetics...)
- Expertise in new processes for sustainable development (Catalysis, Energy consumption, Waste & Water Treatments, Intensified processes)

Member of one EU/ Cleansky project



# Project Idea(s) and Proposal(s) :

Accelerating the uptake of elastomer materials modelling software using A.M. and or other processes (IA)

Elastomers as advanced materials for additive manufacturing (IA)

## Why Printing with Elastomers?

### 3D - ELASTOMERS

- Lack of elastomers with stable ageing properties
- 3D Existing rubber-like materials can only be used for prototyping for short periods of time

### 3D/4D –ELASTOMERS with combining materials for new health care &/or aerospace applications

i.e. Simulation Medical Devices & Anatomic models / with 3D/4D printing materials  
How / Combining smart-silicone materials and 3D printed elastomeric such as silicones

### Functional Models

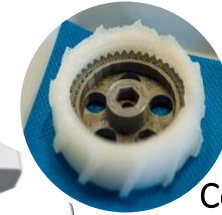
Long term  
Implants



### Customization

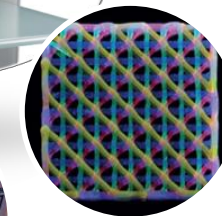


### Material combinations



### Complex Design

(Spongy Lattices  
New Functionalities  
4D printing)



Light Weight  
Materials



Open sources  
Clean Processes  
New Business models

## Why Printing with Silicones?

# Consortium

2 Main options for Elkem Silicones  
Join existing consortium or create a new one

## Known partners / Competence offer

Name	Type	Country	Role in the project
end -user 1	SME	It.	Validation of business cases and functionality
simulation software	Grp.	Belgium	Reduction of Dvpt time/ Data Base

## Partner search

Profile	Type	Country	Role in the project
printer manufacturer	SME	Eu	Design of Printing Head
end-user 2,3...	Grp.	Eu	Validation of functionalities & business cases
Fab-Labs	SME/ Acad.	Eu.	Pilot and experimental open innovation platforms
Hospitals & Regulatory	Acad./ Consult	Eu.	Imaging Data acquisitions and

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