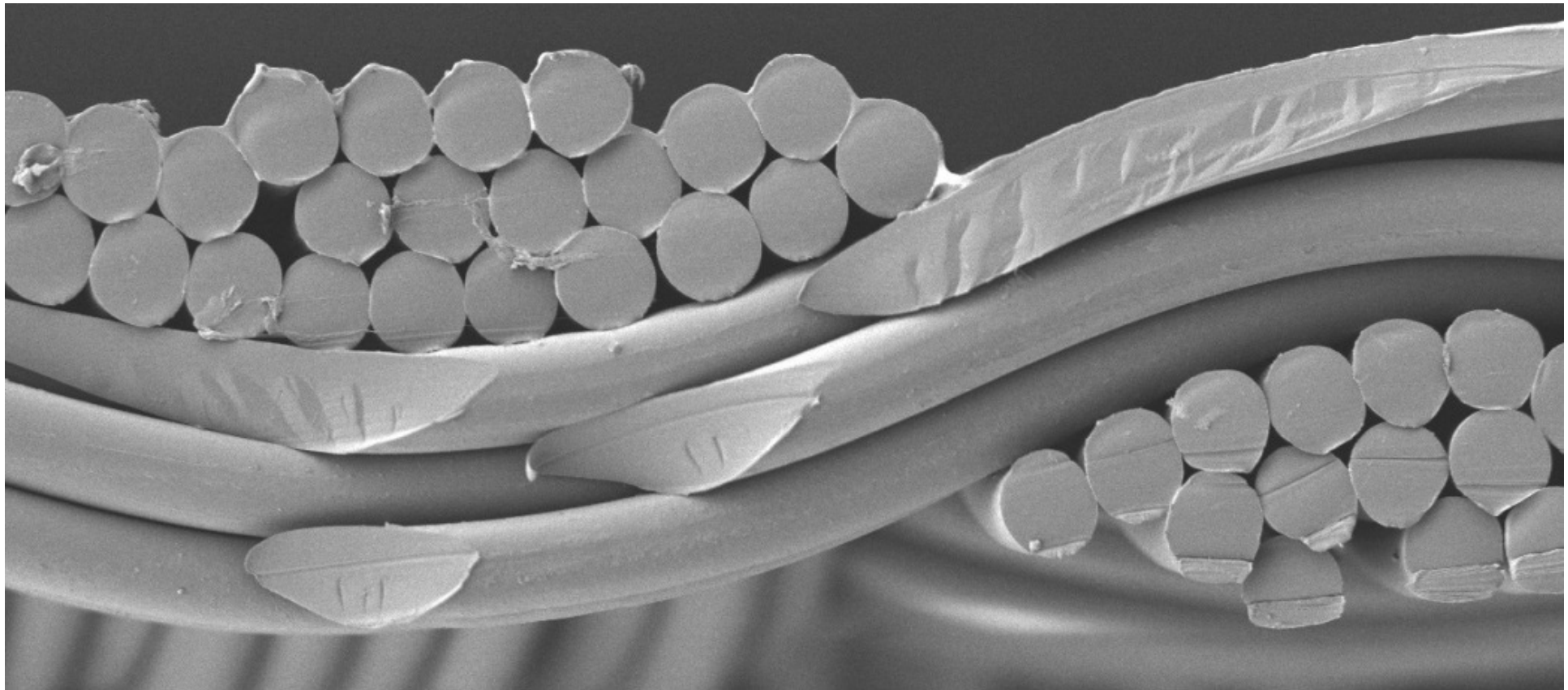




**Ecologische superhydrofobiciteit &  
antimicrobiële/antifouling activiteit**

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**David De Smet, [dds@centexbel.be](mailto:dds@centexbel.be)**



# Challenges

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- REACH
  - Fluorocarbons
- Biocide Regulation
- Environmental toxicity

# PFOA and REACH

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- PFOA is put on the SVHC list of REACH: obligation of communication in Europe in case PFOA > 0.1% (g/g)
- Proposal: maximum concentration for PFOA of 25 ppb and for PFOA related substances 1000 ppb.
- Replace C8 fluorocarbon chemistry by C6 or C4 fluorocarbon products, other fluorine products or even fluorine free water repellents.

# Eco-DWOR

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- Ecological durable water and oil repellency
- Start: January 1, 2017
- Duration: 2 years
- Project partner: FILK

# Duratex

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- Ecofriendly water and oil repellent and antimicrobial textile
- Transcollaboration
  - Centexbel (VL)
  - UCL and Certech (WL)
  - Ensait and CETI (FR)



# Focus

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- Eco-DWOR
  - Evaluating commercially available technologies and experimental products for different applications
- Duratex
  - Developing new fluorine free technology for water and oil repellency
  - Biobased and metal free antimicrobials



# Eco-DWOR

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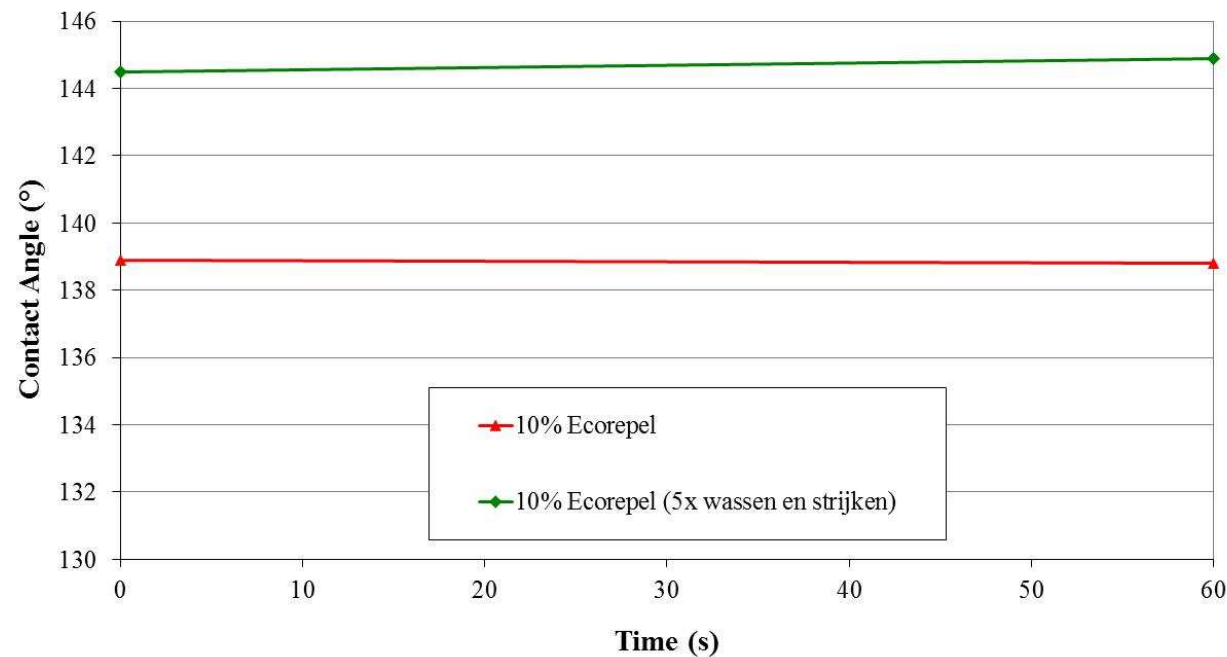
- Fluorine free finishes (DWR)
  - No oil repellency
  - Avi Perl FFR
    - water repellency: 3
    - Difficult to remove mayo, mustard and coffee

# Eco-DWOR

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- Fluorine free finishes (DWR)
  - No oil repellency
  - Ecorepel

*katoen*



# Duralex

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- Fluor free superhydrophobic repellent textile

# Duratex

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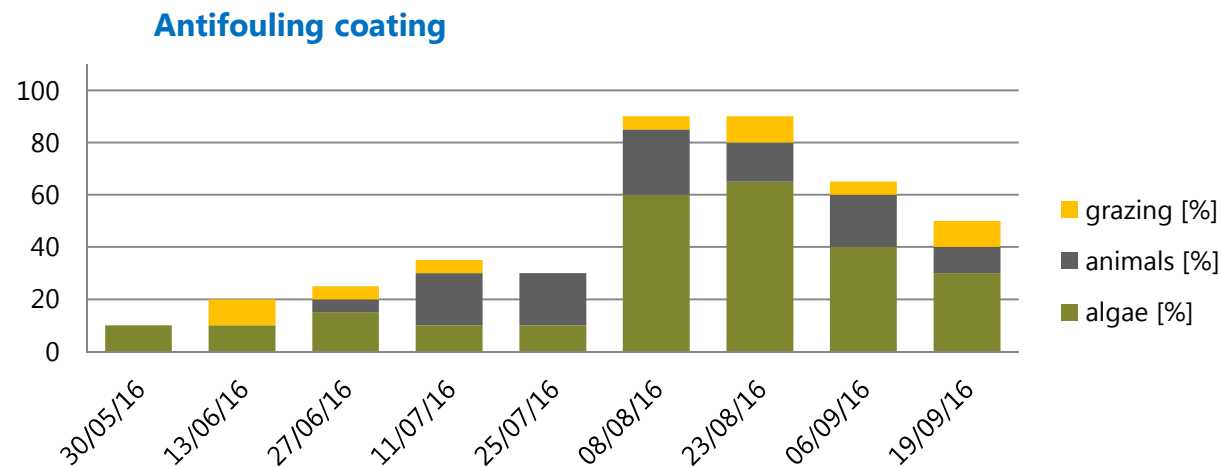
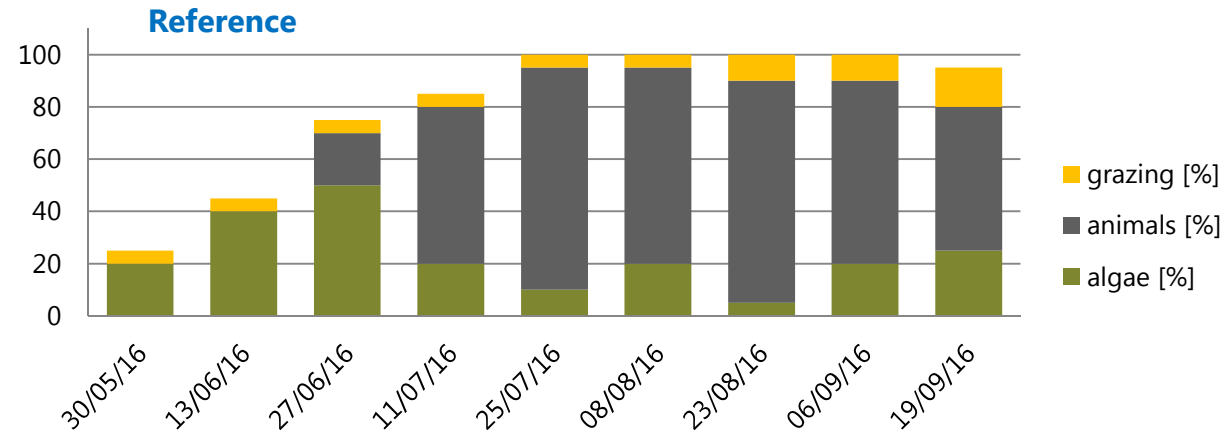
- Metal free biobased antimicrobial
- Tannic acid and monolaurin effective against *S. aureus*
- Kemnat effective against *S. aureus* and *K. pneumoniae*

# Antifouling coating

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# Antifouling coating



# Conclusions

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- Fluor free technology developed showing superhydrophobic properties
- Biobased products have antibacterial activity but at higher concentration
- Non-toxic coating with promising antifouling characteristics developed