

FlexFunction2Sustain

Project overview & status

Christian May, Fraunhofer FEP, Project Coordinator

M48 meeting, online, 21 March 2024



This project has received funding from the European Union's Horizon 2020 research and innovation programme under [grant agreement n°862156](#)

A photograph of a beach heavily littered with plastic waste, including numerous discarded plastic bottles, fragments of plastic, and other debris. The waste is scattered across the sand, extending from the foreground towards the water's edge. The water is visible on the right side of the frame.

FlexFunction2Sustain boosts innovation for sustainable and smart plastic and paper products

➔ to reduce plastic waste

➔ get ready for the digital age

using

nano-functionalization of novel plastic and paper surfaces

- FlexFunction2Sustain project aims at creating an **Open Innovation Test Bed (OITB)** for nano-functionalisation technologies that enable sustainable and smart plastics and paper based products. The ecosystem will support innovative SMEs and industries by drastically reducing the time-to-market for novel concepts, ideas and products.
- Open Call for Pilot Cases
 - Objective: Test Services and Procedures and **Create Success Stories**
 - What you get: Discounted services **up to 100% subsidized support**
 - Available budget: **2.25 M€ for approx. 20 projects**

**·KET
Market**

Target markets



sustainable
smart
packaging



surfaces &
membranes in
bio application



plastic &
paper
electronics



optical films
for security
& design



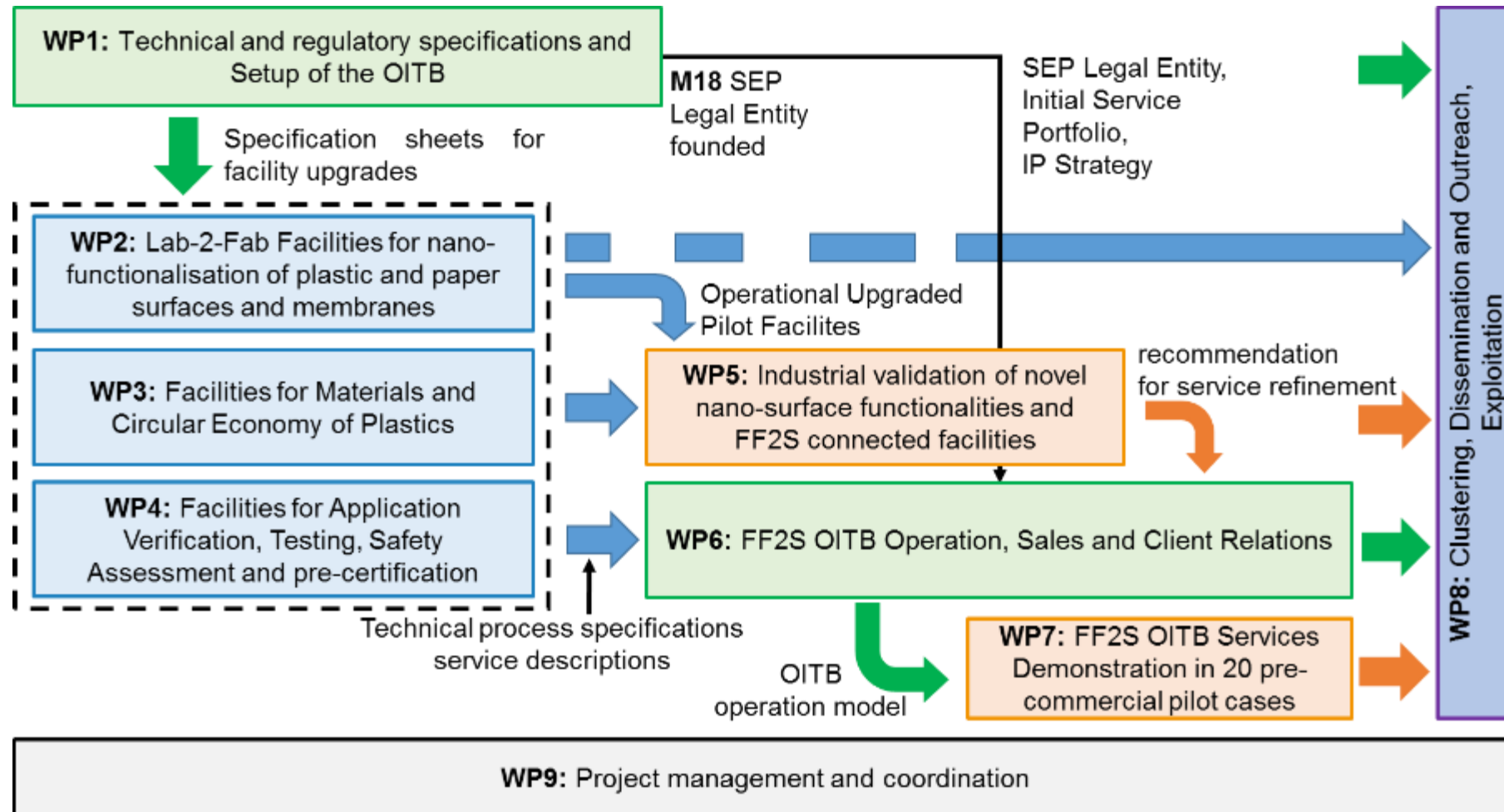
plastic films
for architecture
applications



smart plastics
in automotive
application



Our work plan towards a sustainable Open Innovation Ecosystem ...



Our work plan towards a sustainable Open Innovation Ecosystem is working

- Flexfunction2Sustain as living and active OITB
 - all use cases and first pilot cases successfully completed
 - funded project is coming to the end – project extension by 4 months until end of July
- ESNA - European Sustainable Nanotechnology solutions Association & KETMarket GmbH strategic partnership now officially launched!
 - as a Sales Representative & Single Entry Point, KETMarket will facilitate the access to our OITB offering
 - it consults customers in the selection of the most suitable technology services, while also taking charge of coordinating all development work and managing interactions with ESNA members



Main Achievements M43 – M48



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WP4: Facilities for application verification, testing, safety assessment and pre-certification

- Testing methodologies included into the FlexFunction2Sustain WP4 Catalogues are incorporated by KET into the ESNA Service Catalogue for public offer through the SEP.
- Testing capabilities are being further validated through evaluation of novel materials developed in the Pilot Cases. Food Contact assessment and gas barrier testing are among the most requested characterisations for the new materials.



Overall Migration testing for Food Contact compliance assessment of different barrier coatings for Pilot Cases

WP5: All use cases successfully completed!



Fully recyclable 330ml mono-materials drink pouches

Paper based non-fresh (nuts) food packaging (bags)



Switchable syringe filter with gold coated membrane



Your Companion
Life Science Filtration

21 March 2024



WP leader Elena Turco with satisfied use case partners

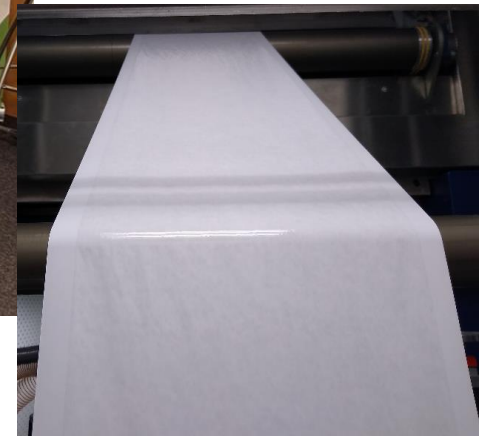


Dashboard component demonstrator with touch functionality



Hueck Folien

Recycled PET and cellophane based label with biobased UV curable resins and recycled AI



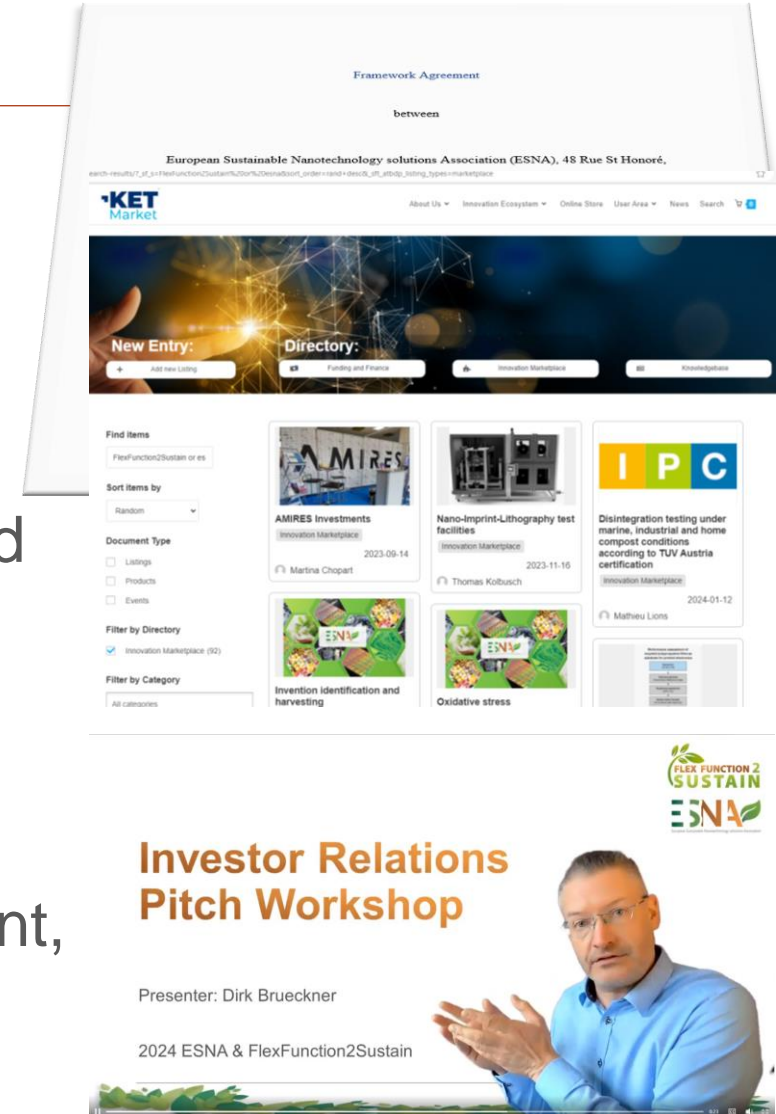
Paper laminate for marine degradable shampoo sachets



FF2S M48 meeting

WP6: OITB Operation, Sales and Client Relations

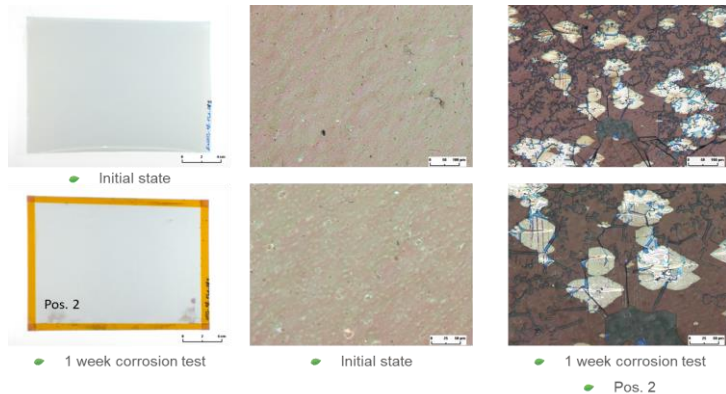
- ESNA Board meeting regularly
 - strategy meeting April 3rd
- Contract signed between ESNA and KET Market!
 - First customers acquired, client database prepared
 - Service catalogue created
- Investor services identified
 - Attended Sustainable Packaging Summit in Amsterdam
 - Training Courses in pitching, business development, trade secrets



WP7: Pilot cases

Finished → 3 Cases, On Track → 4 Cases, Small Delay → 10 Cases

IDOLES “Improvement of durability by optimizing Low Energy Surface”



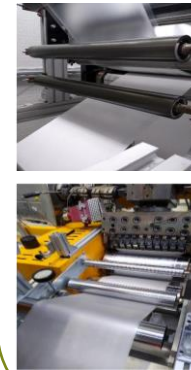
INFRASCREEN



FunFlex “Surface functionalization of Circular flexible food packaging”



SUSTAINPACK
“Sustainable packaging”



HPX Polymers



POSEIDON “Pouch made of cellulose for liquid container applications”



ENLIGHTENMENT
“Functionalisation of agricultural films with multi-season fluorescent dye to enhanced plant development”



Microscopy at IAP on blown films



RECYBIB
“Fully Recyclable Monomaterial Bag-in-Box”



Smurfit Kappa

IVV

RESTO “REcycling & Sorting of plastics with Timegated Optical technology”



Thermoformed cups at IAP



In progress



WP8: Clustering, Dissemination and Outreach, Exploitation

- Visual Identity and Dissemination of the Project and OITB Idea
 - Visibility at events e.g., COATEMA symposium 2023, Prod&Pack 2023, Sustainable Packaging Summit 2023, LOPEC2024
 - FF2S in Press and Media announcing the project outcomes
 - Webpage and social media regularly updated
 - Open Access Scientific publications published
- Clustering with other OITBs & NanoSafetyCluster
 - Regular bilateral exchange: NGM, SNMT, NewSkin, MDOT
 - Clustering workshops with other OITBs organised annually
- Interaction with thematic associations and intermediaries
 - OE-A Working Group Encapsulation
 - EUPC, LINPRA, NanoSafetyCluster → EAB Members
- Open Call prolongation and promotion
 - 4th Open Call for Business Pilot Cases launched
 - Marketing of Cases selected via Open Calls
- OITB Association (ESNA) promotion
 - Social Media presence & presentation at F2F events
 - Website & Promotional materials prepared
- Organisation of events hosted by ESNA & FF2S
 - Investor Pitch Workshop (09 Feb 2024)
 - Trade Secret Seminar (11 Mar 2024)

21 March 2024

LOPEC 2024
06-07 Mar, Munich, DE



Prod&Pack2023
21-23 Nov, Lyon, FR



Organisation of events



Promotion of Pilot Cases



Branding the
OITB Association



FF2S M48 meeting

Outlook

- Flexfunction2Sustain funded project is coming to the end
 - Project extension by 4 months until end of July
- Pilot cases must be completed to the satisfaction of our customers
- Dissemination of outcome of use and pilot cases
- Final Public event of June 18th in Dresden
- EC final review September 26th, online
- Focus on a successful transition to a sustainable OITB business by ESNA (together with the SEP)

Thank you
for your attention!

