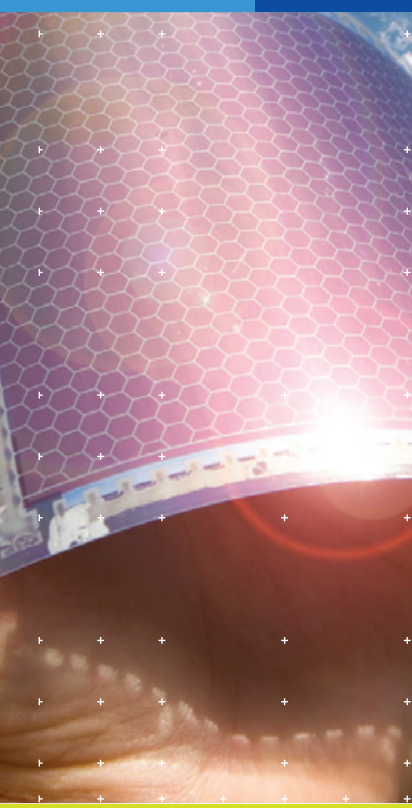




OPTINANOPRO

GRANT AGREEMENT
no.: 686116



HORIZON 2020
H2020-NMP-PILOTS-2015

DURATION
▶ **36 months** ◀

KEYWORDS

Nano-materials (production and properties), nanocomposites, production lines, nanodeposition, electrospray, injection, coating, easy-to-empty / barrier packaging, self-cleaning solar panels /OPVs, lightweight automotive parts, nanosafety

WEBSITE

WWW.OPTINANOPRO.EU

ABSTRACT

Nanocomposites are promising for many sectors, as they can make polymers stronger, less water and gas permeable, tune surface properties, add functionalities such as antimicrobial effects. In spite of intensive research activities, significant efforts are still needed to deploy the full potential of nanotechnology in the industry. The main challenge is still obtaining a proper nanostructuring of the nanoparticles, especially when transferring it to industrial scale, further improvements are clearly needed in terms of processing and control.

The **OptiNanoPro** project will develop different approaches for the introduction of nanotechnology into packaging, automotive and photovoltaic materials production lines. In particular, the project will focus on the development and industrial integration of tailored online dispersion and monitoring systems to ensure a constant quality of delivered materials. In terms of improved functionalities, nanotechnology can provide packaging with improved barrier properties as well as repellent properties resulting in easy-to-empty features that will on the one hand reduce wastes at consumer level and, on the other hand, improve their acceptability by recyclers. Likewise, solar panels can be selfcleaning to increase their effectiveness and extend the period between their maintenance and their lifetime by filtering UV light leading to material weathering. In the automotive sector, lightweight parts can be obtained for greater fuel efficiency.

To this end, a group of end-user industries from Europe covering the supply and value chain of the 3 target sectors and using a range of converting processes such as coating and lamination, compounding, injection/co-injection and electrospray nanodeposition, supported by selected RTDs and number of technological SMEs, will work together on integrating new nanotechnologies in existing production lines, while also taking into account nanosafety, environmental, productivity and cost-effectiveness issues.

PARTNERS

- IRIS (Spain)
- FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG (Germany)
- INSTITUTO TECNOLÓGICO DEL EMBALAJE, TRANSPORTE Y LA LOGÍSTICA (Spain)
- FUNDACIO EURECAT (Spain)
- ORGANIC WASTE SYSTEMS NV (Belgium)
- BIOINICIA SL (Spain)
- LAJOVIC TUBA EMBALAZA DOO (Slovenia)
- SIBO G. D.O.O. (Slovenia)
- INSTITUTE OF OCCUPATIONAL MEDICINE (United Kingdom)
- HPX POLYMERS GMBH (Germany)
- MBN NANOMATERIALIA SPA (Italy)
- BELECTRIC OPV GMBH (Germany)
- PEMU MUANYAGIPARI ZARTKORUEN MUKODORESZVENYTARSASAG (Hungary)
- LASER CONSULT USZAKITUDOMANYOS ES GAZDASAGI TANACSADO KORLATOLT FELELOSSEGU TARSASAG (Hungary)
- ILIRIJA, RAZVOJ, PROIZVODNJA IN TRZENJE KOZMETICNIH IZDELKOV DD (Slovenia)