



Università
Ca'Foscari
Venezia

ACRONYM AND TITLE: NanoFASE: Nanomaterial Fate and Speciation in the Environment

FUNDING PROGRAMME: Horizon 2020 – Leadership and Enabling Industrial Technologies

CALL: H2020-NMP-2014-two-stage – Call for Nanotechnologies, Advanced Materials and Production - Topic 'Assessment of environmental fate of nanomaterials'

SCIENTIFIC FIELD: Nanotechnologies

HOST DEPARTMENT/CENTRE: DAIS – Department of Environmental Sciences, Informatics and Statistics

SCIENTIFIC RESPONSIBLE: Prof. Antonio Marcomini

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€9.954.479	€121.069

ABSTRACT:

Concept: NanoFASE will deliver an integrated Exposure Assessment Framework, including methods, parameter values, model and guidance that will allow Industry to assess the full diversity of industrial nano-enabled products to a standard acceptable in regulatory registrations. Methods to assess how use phases, waste streams and environmental compartments (air, soil, water biota) act as “reactors” in modifying and transporting ENMs will be developed and used to derive parameter values. Our nanospecific models will be integrated with the existing multi-media fate model SimpleBox4Nano for use in EUSES and also develop into a flexible multi-media model for risk assessment at different scales and complexities. Information on release form, transformation and transport processes for product relevant ENMs will allow grouping into Functional Fate Groups according to their “most probable” fate pathways as a contribution to safe-by-design based on fate.

Methodology: Inventories of material release forms along the product value chain are established. We then study how released ENMs transform from initial reactive states to modified forms with lower energy states in which nanospecific properties may be lost. Transport studies assess material fluxes within/between compartments. The experimental work underpins models describing ENM transformation and transport. Open access is provided to the models suitable for incorporation into existing exposure assessment tools (e.g. SimpleBox4Nano) and for more detailed assessment.

Framework completeness is validated by case studies.

Impact: Identified links between ENM material properties and fate outcome (e.g. safe-by-design). Improved representation of nanospecific processes in existing key fate and exposure assessment tools (e.g. SimpleBox4Nano in EUSES). Contribution to standardization. GIS framework to support predictive assessment, catchment and point source management of ENM releases

Planned Start date	Planned End date
1 st September 2015	31 st August 2019

PARTNERSHIP:

1 Natural Environment Research Council	United Kingdom	Coordinator
2 Università Ca' Foscari Venezia	Italy	Partner
3 University of Birmingham	United Kingdom	Partner
4 Eidgenoessische Anstalt Fuer Wasserversorgung Abwasserreinigung Und Gew	Switzerland	Partner
5 Institut Fur Energie Und Umwelttechnik Ev – IUTA	Germany	Partner
6 Goeteborgs Universitet	Sweden	Partner
7 Universitaet Wien	Austria	Partner
8 Wageningen University	Netherlands	Partner
9 The Chancellor, Masters and Scholars of the University of Oxford	United Kingdom	Partner
10 European Virtual Institute for Integrated Risk Management EU VRI EWIV	Germany	Partner
11 Pintura Hempel SA	Spain	Partner
12 Promethean Particles LTD	United Kingdom	Partner
13 Technicka Univerzita V Liberci	Czech Republic	Partner
14 FCC Construcccion SA	Spain	Partner
15 Przedsiębiorstwo Amepox SP ZOO	Poland	Partner
16 Inotex Spol Sro	Czech Republic	Partner
17 Applied Nanoparticles S.L.	Spain	Partner
18 Eidgenoessische Materialpruefungs – Und Forschungsanstalt	Switzerland	Partner
19 Institut National de l'Environnement et des Risques Ineris	France	Partner
20 ETSS, Gottschalk & Co. Kollektivgesellschaft	Switzerland	Partner
21 Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek	Netherlands	Partner
22 Rijksinstituut Voor Volksgezondheiden MILIEU – National Institute for Public Health and the Environment	Netherlands	Partner
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