



Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: SUNSHINE - Safe by Design Strategies for High Performance Multi-component Nanomaterials

FUNDING PROGRAMME: H2020 NMPB - Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology

CALL: H2020-NMBP-TO-IND-2018-2020 (FOUNDATIONS FOR TOMORROW'S INDUSTRY)

SCIENTIFIC FIELDS: Risk reduction

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

SCIENTIFIC RESPONSIBLE: Antonio Marcomini

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 6.521.348,75	€401.625,00

ABSTRACT:

SUNSHINE will develop an e-infrastructure for Safe by Design (SbD) of multi-component (advanced) nanomaterials (MCNM). This web-based application will i) facilitate information exchange between actors along MCNM supply chains to promote the development and use of SbD strategies for specific products; ii) provide access to relevant data, testing guidelines and modelling approaches to test the effectiveness of the SbD strategies, and iii) support Stage-Gate R&D decisions for developing new MCNM technologies and bringing them to the market based on an estimation of their safetyperformance-cost balance and regulatory readiness. The e-infrastructure will be applied to develop SbD strategies for case studies corresponding to supply chains of real industrial products. The effectiveness of these strategies will be tested in the lab by means of Integrated Approaches to Testing and Assessment comprising experimental and modelling methods to assess not only the hazard and exposure of the SbD-modified materials, but also their performance. The development and implementation of SbD strategies as well as the SUNSHINE grouping and read-across scheme and multi-scale models will generate substantial knowledge and data and will enable the use of existing data. SUNSHINE will facilitate adaptation of standards and regulatory guidance documents for MCNMs and explore how safety regulations can keep pace with the innovations in MCNMs. Our approach will reduce, refine and replace (where possible) the need for animal testing by promoting the use of modelling as well as in vitro and cell-free tests. It will not only decrease the cost of industrial R&D and regulatory compliance but will also increase fundamental scientific understanding of how components of MCNMs interact with each other, with other nanomaterials and/or chemicals, leading ultimately to mixture toxicity. The SbD-modified products that are found to be safer, functional and economically viable will be proposed for the market.

Planned Start date	Planned End date
2020	2024
PARTNERSHIP:	
1. UNIVERSITÀ CA' FOSCARI VENEZIA	Italy Coordinator
2. RIJKSINSTITUUT VOOR VOLKSGEZONDHEID EN MILIEU	Netherlands Partner
3. JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION	Belgium Partner
4. SWANSEA UNIVERSITY	United Kingdom Partner
5. GREENDECISION SRL	Italy Partner
6. HERIOT-WATT UNIVERSITY	United Kingdom Partner
7. NATIONAL TECHNICAL UNIVERSITY OF ATHENS – NTUA	Greece Partner
8. ROYAL COLLEGE OF SURGEONS IN IRELAND	Ireland Partner
9. AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	Spain Partner
10. CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	France Partner
11. UNIVERSITA DEGLI STUDI DI GENOVA	Italy Partner
12. Purposeful IKE	Greece Partner
13. INSTITUTE OF OCCUPATIONAL MEDICINE	United Kingdom Partner
14. EIDGENOSSISCHE MATERIALPRUFUNGS- UND FORSCHUNGSANSTALT	Switzerland Partner
15. INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA	Spain Partner
16. SOLVAY SA	Belgium Partner
17. FUNDACION TECNALIA RESEARCH & INNOVATION	Spain Partner
18. AVANZARE INNOVACION TECNOLOGICA SL	Spain Partner
19. Fundacion CIAC Centro de Innovación Andaluz para la Construcción Sostenible	Spain Partner
20. Encapsulae S.L.	Spain Partner
21. LAURENTIA TECHNOLOGIES SLL	Spain Partner
22. OCSiAI Europe S.a r.L	Luxembourg Partner
23. CONSIGLIO NAZIONALE DELLE RICERCHE	Italy Partner
24. TEMAS AG TECHNOLOGY AND MANAGEMENT SERVICES	Switzerland Partner
25. EAST EUROPEAN RESEARCH AND INNOVATION ENTERPRISE LTD	Bulgaria Partner
26. YORDAS GMBH	Germany Partner
27. WARRANT HUB SPA	Italy Partner
28. MINTEK	South Africa Partner
29. EUROPEAN RESEARCH SERVICES GMBH	Germany Partner
30. DUKE UNIVERSITY	United States Partner
31. ARIZONA BOARD OF REGENTS	United States Partner
32. PRESIDENT AND FELLOWS OF HARVARD COLLEGE	United States Partner
33. KOREA RESEARCH INSTITUTE OF STANDARDS AND SCIENCE	South Korea Partner
34. NATIONAL CENTER FOR NANOSCIENCE AND TECHNOLOGY, CHINA	China Partner