



Ca' Foscari
University
of Venice

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

12/12/2019

Planned End date

14/05/2020

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