



Ca' Foscari
University
of Venice

ACRONYM AND TITLE: NanoRESTART: NANOMaterials for the REStoration of works of ART

FUNDING PROGRAMME: Horizon 2020 – Leadership and Enabling Industrial Technologies

CALL: H2020-NMP-2014-two-stage. Nanotechnologies, Advanced Materials and Production (NMP) – Topic 'Materials-based solutions for protection or preservation of European cultural heritage'

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
€ 7.903.397	€ 324.438

ABSTRACT:

Currently there is a lack of methodologies for the conservation of modern and contemporary artworks, many of which will not be accessible in very short time due to extremely fast degradation processes. The challenge of NANORESTART (NANOMaterials for the REStoration of works of ART) will be to address this issue within a new framework with respect to the state of the art of conservation science. NANORESTART is devoted to the development of nanomaterials to ensure long term protection and security of modern/contemporary cultural heritage, taking into account environmental and human risks, feasibility and materials costs. The market for conservation of this heritage is estimated at some €5 billion per year, and could increase by a significant factor in the next years due to the wider use of nanomaterials. The new tools and materials developed will represent a breakthrough in cultural heritage and conservation science and will focus on: (i) tools for controlled cleaning, such as highly-retentive gels for the confinement of enzymes and nanostructured fluids based on green surfactants; (ii) the strengthening and protection of surfaces by using nanocontainers, nanoparticles and supramolecular systems/assemblies; (iii) nanostructured substrates and sensors for enhanced molecules detection; (iv) evaluation of the environmental impact and the development of security measures for long lasting conservation of cultural heritage. Within the project the industrial scalability of the developed materials will be demonstrated.

NANORESTART gathers centres of excellence in the field of synthesis and characterization of nanomaterials, world leading chemical Industries and SMEs operating in R&D, and International and European centres for conservation, education and museums. Such centres will assess the new materials on modern/contemporary artefacts in urgent need of conservation, and disseminate the knowledge and the new nanomaterials among conservators on a worldwide perspective.

Start date	End date
1st June 2015	30th November 2018

PARTNERSHIP:

1 Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase (IT)	Italy	Coordinator
2 Università Ca' Foscari Venezia	Italy	Partner
3 Antonio Mirabile	France	Partner
4 Nationalmuseet	Denmark	Partner
5 Consiglio Nazionale delle Ricerche	Italy	Partner
6 University College Cork, National University of Ireland, Cork	Ireland	Partner
7 MBN Nanomaterialia SPA	Italy	Partner
8 Kemijski Institut	Slovenia	Partner
9 Chevalier Aurelia	France	Partner
10 Universidade Federal Do Rio Grande Do Sul	Brazil	Partner
11 Chalmers Tekniska Hoegskola AB	Sweden	Partner
12 Akzo Nobel Pulp And Performance Chemicals AB	Sweden	Partner
13 Commissariat A L'Energie Atomique et Aux Energies Alternatives	France	Partner
14 Fundación Carlos Slim A.C.	Mexico	Partner
15 Arkema France SA	France	Partner
16 Dirección General de Promoción Cultural y Acervo Patrimonial SHCP	Mexico	Partner
17 Universidade de Santiago de Compostela	Spain	Partner