nanoMECommons

Surface science and nanostructures, Nano-materials (production and properties), Characterization methods of materials, Nanotechnology, nano-materials, nano engineering

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This project is supported by the European Commission under the HORIZON2020 Framework Programme Grant Agreement no. 952869 The contents of this leaflet are the sole responsibility of the parties and cannot be considered as reflecting the position of the European Union.

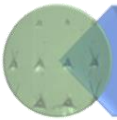
Project Overview

The NanoMECommons is a 4-year project, led by the National Technical University of Athens (NTUA). This project is funded by the EU H2020 Research and Innovation action - RIA (Grant Agreement 952869). It has the participation of 19 partners (11 from industry and 8 academia and research), coming from 10 countries.

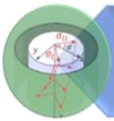
NanoMECommons will establish a transnational and multidisciplinary research and innovation network to tackle the problem of nanomechanical materials characterisation in multiple industries. The focus of **NanoMECommons** is to employ innovative nano-scale mechanical testing procedures in real industrial environments, by developing harmonised and widely accepted characterisation methods, with reduced measurement discrepancy, and improved interoperability and traceability of data.

Scientific Objectives

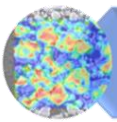
SO1. Interoperable Characterisation Data structures



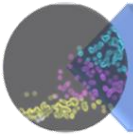
SO2. Accepted standardized high-speed nanoindentation in real industrial environments



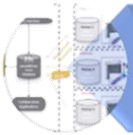
SO3. Nanoscale digital image correlation and residual stress analysis



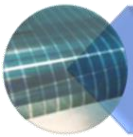
SO4. Multi-modal, in-situ characterisation methods and data exchanging procedures



SO5. Materials ontology and standardization for nanomechanics

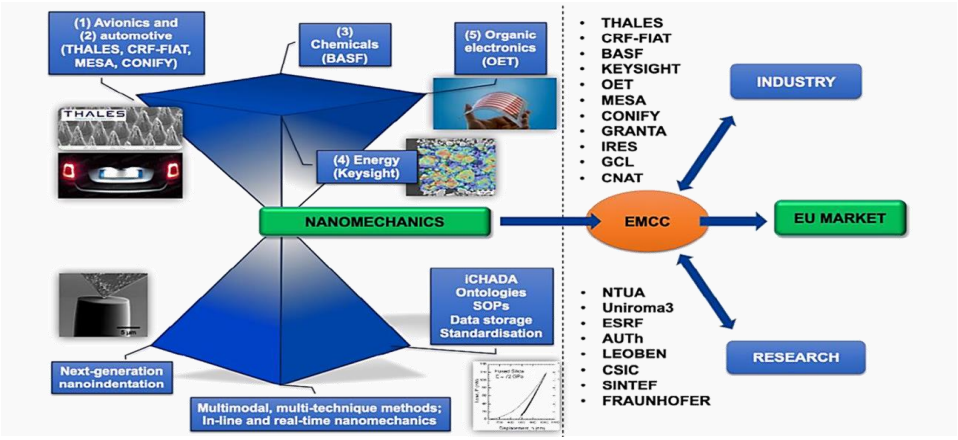


SO6. Open Innovation platform and synergies with European Platforms and Networks and relevant NMBP projects



SO7. Industrial case demonstrations on the manufacturing of nano-engineered materials and films

Synergies



Goals and Approach

Open Innovation in nanoMECommons:

- Integrates and **harmonises** micro- and **nanomechanical tests** with electron microscopy, diffraction, and optical spectroscopy, to develop widely accepted and reliable **protocols**;
- Develops the **i-CHADA** data structure and protocols for improved interoperability of characterisation

Open
Innovation
Environment

Goals and Approach – *cont.*

Utilize previous knowledge/properties/models with Materials domain ontology for knowledge management

Develop and integrate Artificial Intelligence toolboxes to establish process-structure-properties relationships

CHAMEO

Validation activities on current/emerging characterization toolboxes

Improve the capacity of characterization

Contact

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