

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

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### **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 highspeed 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

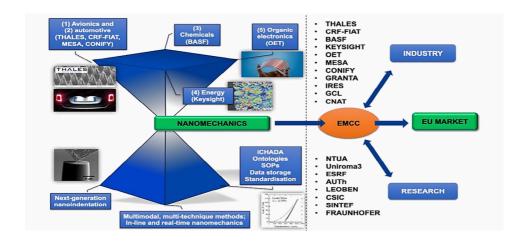


SO6. Open Innovation platform and synergies with European Platforms and Networks and relevant NMBP projects



SO7. Industrial case demonstrations on the manufacturing of nanoengineered 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



### Goals and Approach - cont.



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



**CHAMEO** 

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



Validation activities on current/emerging characterization toolboxes



Improve the capacity of characterization

### **Contact**

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4 V2.2