Consortium:
A multidisciplinary team of 28 members from 9 countries

Key innovations

- Method alignment and simplification
- Comprehensive physicochemical characterisation
- Universal sample preparation and introduction systems
- Harmonisation of hardware to reduce equipment cost
- Error reduction through enhanced data management
- Method comparability enhancement

Expected impacts

- Enable identification of key descriptors that reveal correlations associated with health & environmental impacts and meaningful basis for grouping, read-across and QSARs purposes
- Increase confidence in nanosafety studies and findings through sound physico-chemical characterisation methods and standard operating procedures
- Reduce costs related to the physico-chemical characterisation of nanomaterials in relevant environments
- Identify synergies with applications of the methods in other areas such as quality control, product traceability, labelling and counterfeiting

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For updates on ACEnano outcomes, activities and events visit:
www.acenano-project.eu

This project has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No. 720952.
ACEnano will introduce confidence, adaptability and clarity into nanomaterial risk assessment by:

- Innovation in nanomaterials physicochemical characterisation methods
- Delivery of a robust tiered approach in characterisation
- Development of widely implementable analytical tools, with a simple and facile contextual description
- Initiation of a reliable nanomaterials grouping framework
- Support for stakeholders and users

**Vision**

ACEnano Toolbox, available both in physical and virtual forms and comprising:

- Analytical innovation in either novel or poorly developed techniques
- Optimisation of existing techniques and instrumentation
- Benchmarking and standardisation of well developed techniques
- Data capturing and management innovations
- Three layer training model: core cohort of experts from the consortium, community training events, and other training tools
- Decision tree to guide users: (specially SMEs) through selection of the most appropriate methods to address their needs in risk assessment

**Main outcome**

VITROCELL® Systems (VC) exclusively concentrates on the developing, producing, installing, training and servicing of advanced in vitro exposure systems.

VC’s team is driven by their vision for new in-vitro standards through state-of-the-art technology, highly qualified workmanship and absolute client dedication. VC has successfully collaborated with clients from leading research institutes, contract research organizations, regulatory authorities or industrial laboratories across the world. Working with our team experts, all modules have been tailored to create durable and complete turnkey-systems for in vitro inhalation toxicology. Gases, environmental atmospheres, nanoparticles and complex mixtures are analysed on lung cells at the air/liquid interface using these systems. Over a decade of devotion to research in this specific field has given VC’s team of design & precision manufacturing specialists the opportunity to mentor highly diversified and complex projects from conception to completion.

**ACEnano partner profile: VITROCELL® Systems**

VITROCELL® Systems role in ACEnano

- Miniaturisation of existing Automated Exposure Station into benchtop version for use of airborne nanomaterials
- Enabling compatibility of mass spectrometry nebuliser as aerosol source together with ETH Zürich
- Design analytical modules for use of confocal and transmission electron microscopy
- Coupling confocal, transmission electron microscopy and stereology for dose quantification together with University of Birmingham

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![Scheme of cell exposure at air liquid interface within the VC exposure module](image)