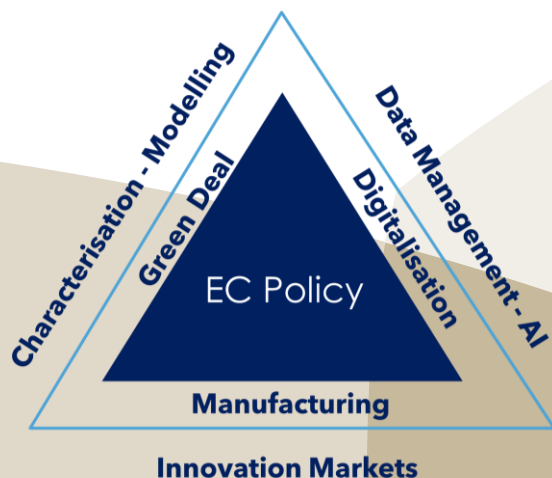
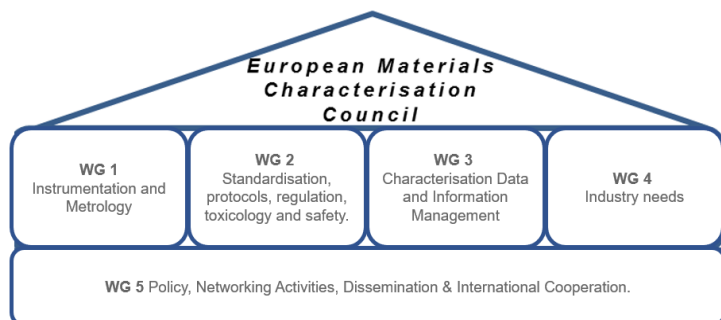




EMCC: unravelling the materials' potential, upscale and industrial uptake

EMCC is a European initiative set up at the beginning of 2016, based on and strengthening the existing European Materials Characterisation Cluster (created in 2014).

Council Structure



Activities

- Representation and the promotion of fundamental research and of applications in the field of materials characterisation
- Advice and Planning in characterisation protocols development and standardisation activities
- Support and coordinate CHADA development and compliance with up-to-date proceedings
- Providing guidance and support in the establishment of ontologies in characterization domain (in cooperation with EMMC)
- Establish technological roadmaps
- Establish channels with policymakers & Coordination between European, national, regional initiatives and Member State support
- Networking, International cooperation and stakeholders engagement
- Technology transfer and Education
- Dissemination and events co-organisation

Join us, it matters!!!



emcc@characterisation.eu

<http://characterisation.eu/>

info@NanoMECommons.eu

<https://www.nanomecommons.net/>





PLANTING THE SEEDS FOR MATERIALS DIGITAL BUILDING A COMMUNITY AROUND OPEN PASSPORTS INNOVATION ENVIRONMENTS (OIEs)

A significant pillar regarding certification is that characterisation can provide the basis for materials digital passports, including ecolabels, while offering full traceability and transparency to the measurement methods that were utilized to determine materials properties, documented via materials ontology, EMMO, in the digital material passport. Maintaining a digital material's identity can support traceability, benchmarking, certification, societal impact, and IPR monitoring, as well as disseminate and guarantee a circular by-design material development and the strengthening of Made-in-EU label, as well as societal confidence. The aspect of traceability in this pillar of materials certification, in the pre-competitive stage, can be addressed today only by the informatics provided by physical characterisation. Traceability through a digital passport gives to Industrial stakeholders the ability to enable monitoring and enhance management/repair/upgrading during the entire lifecycle and support the smart (re-)use at the end-of-life.

EMCC has identified a gap in the digital records on such data, which once overcome, will enable the materials properties within different product stages during use life and second life to be assessed against commercial records.

The materials manufacturing industries require full control of resources, minimization of wastes across value chain, adaptivity and flexibility of the production. Global convergence on the same international standards helping to reduce adaptation costs and strengthening EU and global value chains. This would result in the EU retaining its influence in setting global standards and being the main driver for advancing characterisation technologies and provide smart characterisation 4.0 (feedback on the process and feedback on process/process windows for materials design and zero-defect-manufacturing) and certification schemes to satisfy time-, effort-, and resource- savings in characterisation and support the manufacturing industry in the twin transition. OIEs provide a living ecosystem with access to technology stacks for industry, saving crucial resources and effort for industry.

EMCC is building on the vision of OIEs and Open Innovation Testbeds (OITBs), aiming to foster developments, which offer cutting edge solutions/services to industry, combining Digitalisation, smart characterisation 4.0, and interoperability as engines for innovation in Industry 5.0 era.

Join us, it matters!!!



emcc@characterisation.eu

<http://characterisation.eu/>

info@NanoMECommons.eu

<https://www.nanomecommons.net/>





VISION TO 2030 FOR ADVANCED MATERIALS BRINGING TOGETHER CHARACTERISATION, SERVICES MODELLING, DATA SCIENCE WITH MANUFACTURING

Digitalisation opens opportunities for European SMEs in niche high-tech markets and for strengthening the competitiveness of large global players in Europe. The Advanced Materials 2030 Initiative (AMI2030) has identified the key role of advanced materials in the green and digital transition and highlighted the need to combine materials and digital competences in materials industries as key challenge of the European materials industry. As a complement and support to this initiative, EMCC aims at addressing these challenges by bringing together key players in European industry and policymakers.

EMCC will showcase the strategic role of characterisation in the broader framework of AMI2030 in driving innovation and promoting the best use of materials in industry and society, with a particular attention to digitalisation.

The underpinning actions require to support characterization needs/challenges in industry in connection to technological advances, digitised characterisation, characterisation and modelling/AI interplay, as well as Policy related, such as the role of advanced characterisation in the context of megatrends (green/blue growth, etc.). Topics that need further explanation of the expected outcomes and support by priority actions, will be included in strategic roadmaps, which will be periodically updated based on continuous feedback from experts.

Characterisation's digitalization and contribution to informatics for the centralisation of knowledge can help EU Industry to go to the next level with specific priority actions, focusing on addressing the priorities of Strategic Materials Innovation Markets.

Stakeholders

- Materials manufacturers and integrators
- Manufactures of analytical instruments
- Standardisation bodies and metrology institutes
- Materials scientists divided into sub-groups according to the main specific expertise (microscopy, spectroscopy, surface, and interface characterisation techniques, etc.)

Join us, it matters!!!



emcc@characterisation.eu
<http://characterisation.eu/>
 info@NanoMECommons.eu
<https://www.nanomecommons.net/>





Themes

- Lifecycle encompassing academia, end users and regulation.
- Reliability of metrology, meaning validation, calibration, standardisation, uncertainty budget, traceability, reference materials and modelling.
- Industry 5.0: Reduced time-to-data; linking nano-metrology with in-situ monitoring and industrial needs.
- Characterisation to support materials modelling and digital metrology: validation and data.
- Characterisation data, AI, metadata and information management.
- Characterisation for upscaling: supporting the transition from complex testing towards accessible methods/tests for industry ("from lab to fab" approach)
- Methods to provide reliable risk assessments and recommendations to regulators (e.g., regarding toxicity); providing a suitable background for nanosafety, biomolecular devices and applications.

Mission Objectives

- To support establishing a community of European stakeholders in the process of developing and improving characterisation tools in order to bring the development of nanomaterials and advanced materials in Europe into end products more successfully.
- To gather the needs and requirements of that community for characterisation tools and supporting actions.
- To provide a forum for discussion, problem solving and planning R&I activities in Europe.
- To establish the formation of standard methodologies on nanocharacterisation in Europe and create a common background.
- To create a platform for nanocharacterisation, with the attempt to act with Open Research Data.
- To link nanometrology with in-situ monitoring and industrial needs.
- To support EC policy development, underpinning the relevant EC priorities on digitalization and Green Deal, with a stakeholder driven roadmap for characterisation techniques and tools for greener manufacturing and upscaling of nano- and advanced materials in Europe. To provide a suitable background for regulation and nanosafety. To support the strengthening of Europe's industrial technology leadership and competitiveness and thus contributes to the main objectives of the Cluster 4 and 5 programme.

Join us, it matters!!!



emcc@characterisation.eu

<http://characterisation.eu/>

info@NanoMECommons.eu

<https://www.nanomecommons.net/>

