



Bridging the Innovation Gap

Advanced materials & nanotechnology for clean energy & clean mobility technologies

**Setting up of a new Thematic Area within the S3-Platform on
Industrial Modernisation**



Introduction to the proposal



- ▶ Convinced of the key role that EU regions can play in innovation and economic development of EU, EMIRI & its members are promoting the setting up within the S3 (Smart Specialisation Strategy) Platform on “Industrial Modernisation” of a new Thematic Area on “Advanced Materials & Nanotechnologies for clean energy & clean mobility technologies”
- ▶ EMIRI, the Energy Materials Industrial Research Initiative, represents more than 60 organizations (industry, research, associations) active in advanced materials & nanotech for clean energy & clean mobility technologies. The association contributes to industrial leadership of developers, producers and key users of advanced materials by shaping an appropriate innovation, manufacturing and energy policy framework at EU level
- ▶ Accelerating clean energy and clean mobility innovation cannot happen sustainably without accelerating innovation in advanced materials, and this represents a strong business opportunity for EU. Today, the EU-based industry of advanced materials for clean energy techs represents more than 30 billion euro yearly revenues, about 10 percent of which is reinvested into R&D and production capacities. To serve EU market as well as global markets, our industry employs 500,000 people (direct & indirect) which is half of all EU-based jobs in clean energy value chains
- ▶ In frame of Horizon 2020, EMIRI collaborated with EU Commission (DG R&I) to develop the innovation roadmap on advanced materials & nanotech for clean energy & clean mobility technologies outlined in the EMERIT Industry-Driven Initiative documents and further translated into the NMBP and LCE funding programmes of EU Commission
- ▶ EMIRI aims now to involve more key EU regions to participate more actively to this wave of innovation and reap the social, economic and environmental benefits for their industry and their population. Provided a new Thematic Area can be set up by a “club” of key EU regions, EMIRI and its members will bring about a strong commitment & drive to support the setting up and the development of R&I activities across and between regions in field of the S3 context

S3P-Industrial Modernisation & The Call for a new Thematic Area



1. S3 Platform

- The S3 Platform assists EU Countries and regions to develop, implement and review their research and innovation strategies for Smart Specialisation (RIS3).
- The RIS3 help to prioritise and align efforts between public and private stakeholders in EU regions and allocate EU and regional funds in a focused and efficient way.
- The role of the S3 Platform is to provide information, methodologies, expertise and advice to national and regional policy makers, as well as promote mutual learning, trans-national cooperation and contribute to academic debates around the concept of smart specialization.
- So far, there exist three Thematic Platforms on Agri-Food, Energy and **Industrial Modernisation**.

2. S3P- Industrial Modernisation

- Aims to support EU regions committed to generate a pipeline of industrial investment projects following a bottom-up approach - implemented through interregional cooperation, cluster participation and industry involvement.
- Each Thematic Platform consists of Thematic Areas.

3. Call for a new Thematic Area within S3P-Industrial Modernisation

- A partnership in a new Thematic Area can be proposed by any EU region or group of EU regions, which will act as leading region(s) provided that this corresponds to the priority areas of their Smart Specialisation Strategy and the interest of their industry to develop investment projects.

Criteria to be fulfilled by interregional partnerships for establishing a new Thematic Area:

- 1 The regional partnership should be composed of at least 3 regions from 3 different EU Member States;
- 2 The Thematic Area should correspond to the leading regions' smart specialisation strategy;
- 3 A commitment letter signed by the representative authority of the leading regions to ensure political commitment and resources for the management of the partnership for at least 2 years;
- 4 High relevance and importance of the proposed Thematic Area for Industrial Modernisation.

S3P-Industrial Modernisation

Existing Thematic Areas & EMIRI proposal



Non-food Biomass

Objective: Develop new integral biobased value chains and new connections between various sectors leading to new interregional business opportunities and co-investment through interregional cooperation and partnerships for co-investment, exchange of information and ideas.

Focus: Bioeconomy



Sport

Objective: Help strengthen the sport industries at EU level.

Focus: Create the critical mass to develop break-through actions; Develop different models for public-private partnerships that are needed in this area (in particular considering transforming healthcare into proactive care for health).



Efficient and Sustainable Manufacturing

Objective: Transfer innovative solutions coming from research to industry and exploiting the potential of smart specialization in order to promote new efficient and high value-added supply chains.

Focus: Increasing quality, environmental and social sustainability of manufacturing activities; Reducing energy, emissions, resources & materials consumption; inclusion of humans in the factories Vision.



Textile Innovation

Objective: Strengthen regional textile innovation ecosystems across Europe and enable Textile & Clothing SMEs to invest more in innovation.

Focus: Develop production systems which are cleaner, less labour and resource intensive and more circular; on-demand and customised production; ICT and big data analysis in business processes.



3D-printing

Objective: Identify opportunities for joint-demonstration between regions, based on a solid mapping exercise and the detected complementarities between existing demonstration facilities and company needs.

Focus: Implementation of synergies in new 3DP value chains across regions based on smart specialisations of the regions. The focus lies on > TRL5.



Medical Technology

Objective: Reconciling better health / healthy ageing with growth opportunities for healthcare industries.

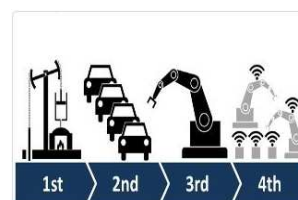
Focus: Digital transformation; Better access; From symptomatic treatment of diseases towards Predictive, Preventive, Personalized, Participatory, Precision medicine and integrated care.



New Nano-Enabled Products

Objective: Aims to build concrete joint demonstration cases in which regions can intensify collaboration.

Focus: Identification of existing and missing value chains within nanotechnology across Europe.



SMEs to the Industry 4.0

Objective: Involve SMEs to the Industry 4.0 paradigm by increasing their absorption of specialised digital services.

Focus: KET and roadmaps to increase productivity and added value, but also promoting new business models for SMEs; Fast growing sectors, as well as traditional sectors.



Advanced Manufacturing for energy applications

Objective: Make the EU a global leader in manufacturing robust high integrity components for marine renewables and offshore energy applications.

Focus: Offshore Oil and Gas, Offshore wind, Ocean energy



Open call for new Thematic Area –

Application for the new Thematic Area
“Advanced materials & nanotechnology for
clean energy & clean mobility technologies”

- promoted by EMIRI and its members

Current challenges we will address



1 CLEAN TECHNOLOGY

- ▶ Advanced materials are key for development, deployment & adoption of clean energy and clean mobility techs.
- ▶ Cost of clean energy and clean mobility techs must keep coming down to ensure acceleration in adoption & deployment across EU in frame of the Energy Union.
- ▶ This is made possible by reduction in cost, increase in performance and extension of lifetime of the advanced materials which are all linked to innovation.

Innovations enabled by interregional collaboration and the regional ecosystems will result in reduced costs for advanced materials and hence increased development, deployment and adoption of clean energy and clean mobility techs.

2 INNOVATION ECOSYSTEMS

- ▶ Strong innovation ecosystems are needed to profile the region as a hotspot for innovation, to attract industrial investment and to develop the regional economy.

Interregional collaboration and the regional ecosystems will foster European-wide innovations and establish (inter)regional innovation ecosystems in advanced materials & nanotech for clean energy and clean mobility techs. Further, it provides risk sharing by bringing together all stakeholders along the value chain from academia & industry.

3 INDUSTRIAL PRESENCE

- ▶ EU must establish industrial leadership in advanced materials & nanotech for clean energy and clean mobility techs or other world regions will.
- ▶ Global trends: Developing countries invest more than developed countries in clean energy and clean mobility tech, with China in the lead. As a consequence, Europe is losing its leadership in R&D investment in this field, which creates future dependency risks on imported clean energy and clean mobility techs and could result in job loss and lower growth.

Interregional collaboration and the regional ecosystems will enable the EU to take industrial leadership in advanced materials for clean energy and clean mobility techs and hence to secure and foster growth and jobs for the future.

Added-value for regions



Contribute to the industrial modernisation of regions and create economic growth and jobs in the field of advanced materials & nanotech for clean energy and clean mobility techs

1

Accelerate the transition from the lab to the market through funding in the field of advanced materials & nanotech

- Leverage and amplify funding available at EU level
- Complement the actions on EU level
- Help other organisations than those already successfully supported at EU level, particularly SMEs and startups

2

Develop innovation ecosystems in the field of advanced materials & nanotech for clean energy and clean mobility techs at regional level

- Reinforce innovation interactions, collaborations and cooperation between industry, SMEs, RTOs and universities
- The different players can benefit from each other by building on complementarities and maximizing synergies
- Ecosystems would act as a catalyst for innovative start-ups

3

Increase the visibility of the region in this field and stimulate interactions between regional ecosystems players and players in other regions

- Increased excellence and visibility will attract more players into the region and enable growth and jobs
- Regions can benefit from each other by building on complementarities and by maximizing synergies

Added-value for regional players



Regional players	Benefits	
Financial benefits		
All	<p>Regional players already successfully participating in European funding schemes can:</p> <ul style="list-style-type: none">▶ amplify financial sources through access to regional funding;▶ compensate for the continuously declining funding rate of success (due to increasing competition) on European level.	<p>Regional players</p> <p>(i) which have been participating with no success in European funding schemes</p> <p>(ii) which have not yet been active in European funding schemes, but open to (inter)regional funding can:</p> <ul style="list-style-type: none">▶ gain access to public financial sources through regional funding;▶ gain experience in the elaboration of funding applications on a regional level, which can prepare for the proposal writing on a European level – leading to excellent, higher-winning proposals.
	<ul style="list-style-type: none">▶ Be well prepared and positioned for future continuation of public funding support by joining the new thematic area: Today, structural funds are distributed by regions in a very flexible way. However, the EC is pushing towards a more directive way of the allocation of structural funds, which might be stronger linked to the regions S3 in the future.	
Strategic benefits through (inter)regional collaboration		
Industry, RTOs, SMEs & startups	<ul style="list-style-type: none">▶ Access to talent, ideas, innovation and innovative startups▶ Thematic area will feed the project pipeline of close-to-the-market projects▶ Access to market, infrastructure, technical expertise and knowledge▶ Increase in industrial competitiveness through innovation	