



EMIRI General assembly (22.11.2023)

Advanced Materials for Industrial Leadership

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Overview

- A policy initiative « Advanced Materials for industry leadership »
- Ongoing actions at European level
- Conclusion

Advanced Materials for Industrial Leadership

KEY PRIORITIES FOR 2024

A European Green Deal

- European Wind Power Package
- 2040 climate target
- Initiative for water resilience

A Europe fit for the digital age

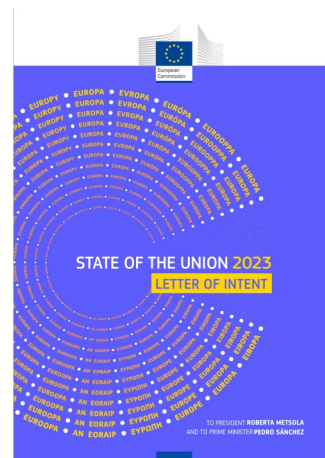
- EU Space Law
- Strategy on Space Data Economy
- Initiative to open up European supercomputer capacity to ethical and responsible AI start-ups

An Economy that Works for People

- EU Biotech and Biomanufacturing Initiative
- Follow up to the Val Duchesse Summit
- **Advanced Materials for industrial leadership**
- Initiative on rules on the European Works Council

A Stronger Europe in the world

- Strengthen partnership with Africa
- European Defence industrial strategy



Strasbourg, 17.10.2023
COM(2023) 638 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS

Commission work programme 2024

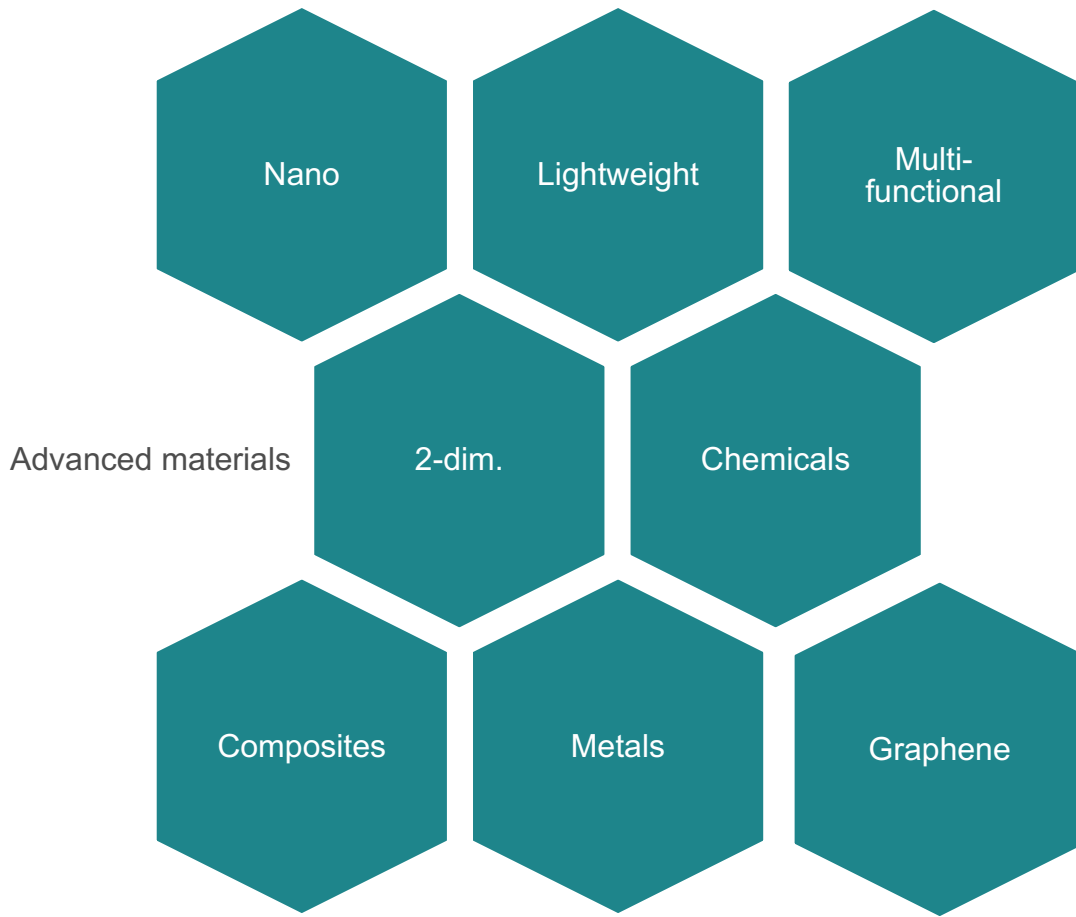
Delivering today and preparing for tomorrow

An Economy that Works for People

6.	Biotech and biomanufacturing	EU biotech and biomanufacturing initiative (non-legislative, Q1 2024)
7.	Social dialogue	Follow-up to the Val Duchesse summit (Q1/Q2 2024)
8.	Green and digital transition, open strategic autonomy	Advanced materials for industrial leadership (non-legislative, Q1 2024)
9.	European Works Council	Initiative on rules on the European Works Council (legislative or 153(2)(b), in conjunction with Article 153(1)(e) TFEU, Q1 2024, responds 'Revision of the European Works Councils Directive')



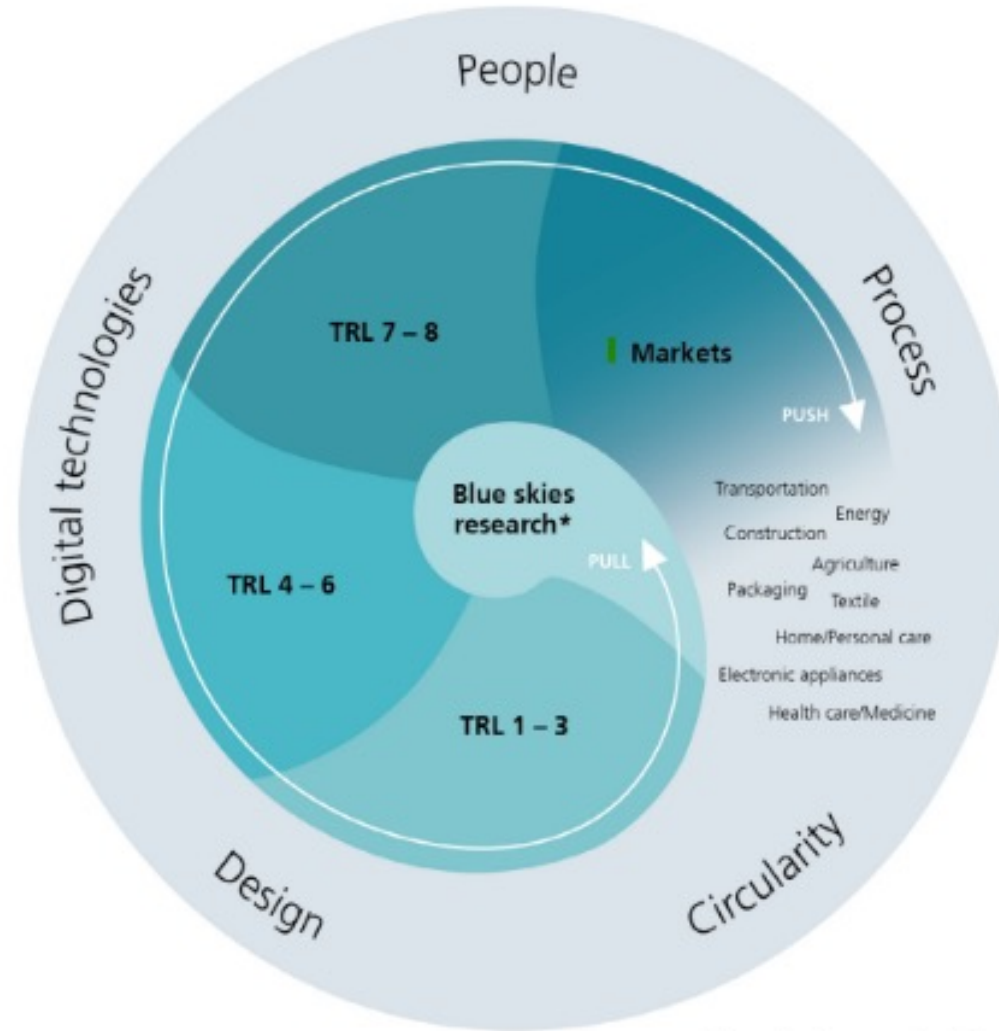
Scope: Inclusive approach



Cooperation across existing initiatives

- Build on complementarities and synergies among them and identify collaboration areas
- Establish joint activities (roadmaps, knowledge and results exchange, joint calls, etc.)
- Maximize impacts on defined objectives at European and national level
- Effective link with manufacturing

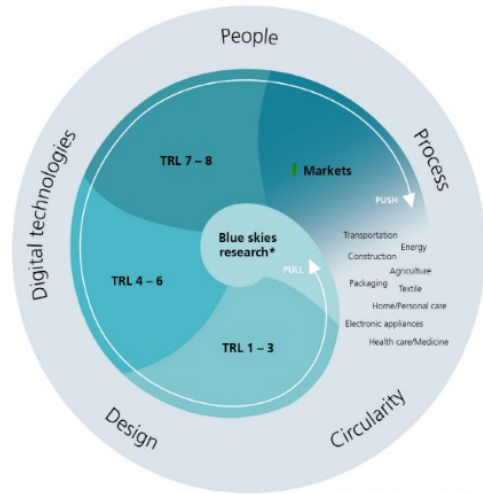
Call for a materials ecosystem (Feb 2022): Materials 2030 Manifesto



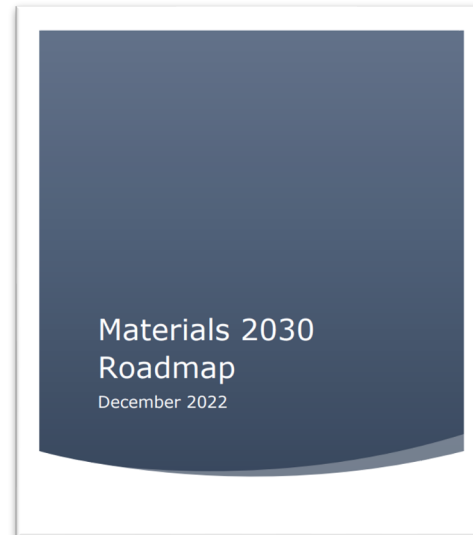
* Research where „real-world“ applications are not immediately apparent

AMI2030: Stakeholders calling for change

Materials 2030 Manifesto Feb 2022



* Research where „real-world“ applications are not immediately apparent



One major objective: aligning national and EU research programmes and scaling up investments?

- Facilitate cooperation and mutual learning on strategy building among Member States on national programmes for advanced materials. *[EC]*
- Build synergies between EU R&I programmes and ERDF programmes, including smart specialisation, and regional innovation valleys fund to support capacity building for advanced materials R&I. *[EC]*

Tentative analysis together with national experts: Situation under national research programmes in Member States

- AT, DE, DK, EL, FR, LU and NL: dedicated programme or strategy for advanced materials.
- BG, CZ, EE, ES, FI, IE, IT, LT, LV, MT, PL, PT, RO, SE, SI and SK: no specific strategy on advanced materials, but advanced materials are included as part of national R&I strategies.
- CY and HR: no specific R&I programme or strategy for advanced materials
- BE and HUN: to be analysed

Previous investments in Horizon Europe

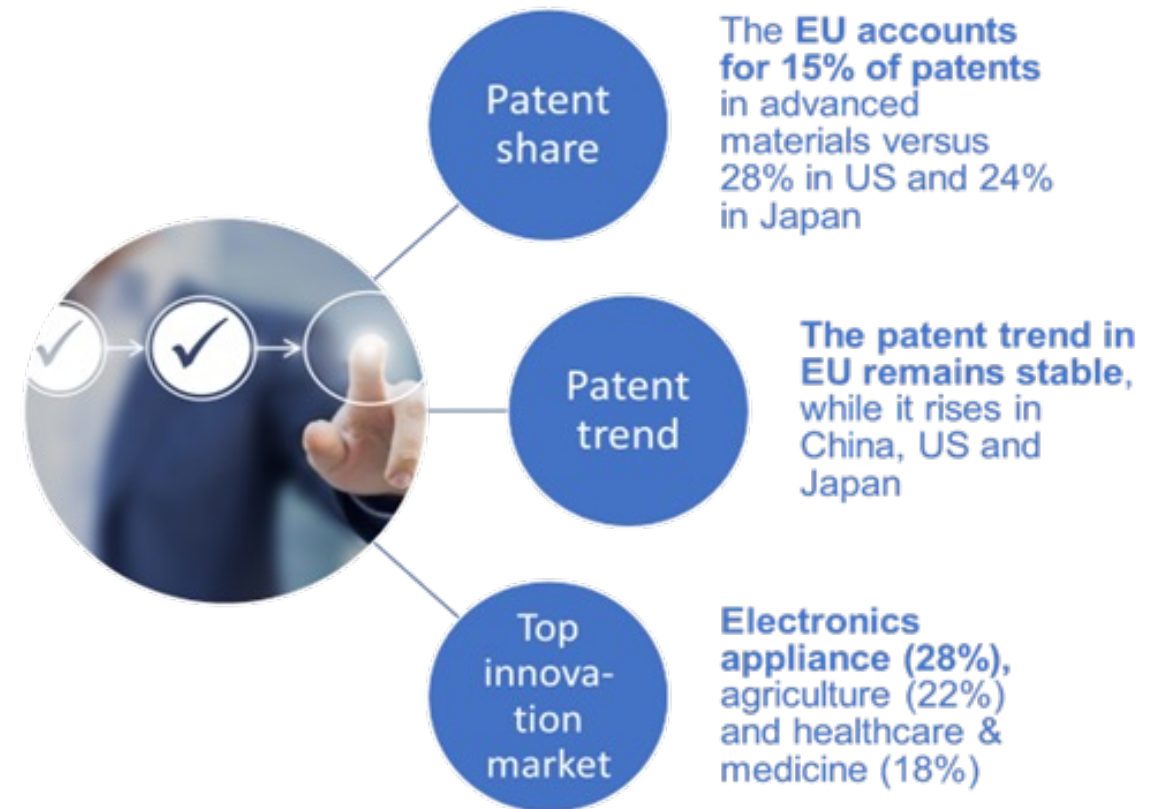
Horizon Europe CL4 WPs	Advanced Materials and Safe and Sustainable by design	2D materials/Graphene
21-22	426M	47.5M
23-24	342M	51M
25-27	To be determined	To be determined

Ongoing and open actions on the side of DG R&I

- Ongoing
 - Study on corporate patents and investments
 - Commission Recommendation on SSbD (ongoing testing framework)
 - CSA DIGIPASS – project to be launched on 1 April
- Under discussion with Member States and stakeholders
 - European Partnership on advanced materials (“I’M4EU”)
 - Advanced Materials Academy ?
 - Identify substitution needs under the Raw Materials Information System (RMIS) with JRC?
 - Open innovation test beds - technology infrastructures?

Advanced materials industrial patents study

- Uptake of advanced materials technologies. Company-owned patent analysis
- R&D&I investments and trends in advanced materials
- International competitiveness of EU industry in advanced materials. Geographic location, collaborations
- Start-ups and innovation leaders. Start-ups, innovation leaders



Advanced Materials – industrial patents study

	2016	2017	2018	2019	2020	2021
CN	5	6	8	10	12	15
EU-27	30	30	35	37	39	35
JP	21	20	21	23	22	16
KR	15	16	18	20	21	18
UK	13	13	14	15	15	19
US	98	88	100	113	119	133
Rest of the world	15	13	14	15	14	15

Commission proposal for Strategic Plan 2025-2027: Innovative Materials for EU (I'M4EU)

Context

- The Critical Raw Materials Communication ([COM\(2023\)165](#)) announces that the Commission will present a **Coordinated Plan of Action with Member States on advanced materials**
- The co-programmed partnership Innovative Materials for EU (I'M4EU) is one of the instruments to implement CP at European level

Objectives for the co-programmed partnership

1. Addressing vulnerable materials value chains
2. Supporting for R&I from low to high TRLs
3. Digitising materials' design
4. Crossing the valley of death and accelerating innovation uptake
5. Contributing to a new skills and up-skilling agenda

Safe and Sustainable by Design (ongoing)

- Proposes a European **framework for ‘safe and sustainable by design’** chemicals and materials for **R&I activities on a **voluntary basis****.
- Addressed to Member States, industry, academia, RTOs.
- **Testing period** during 2023-2024 → get feedback to be able to improve relevance, reliability and operability.
- Major workshop on 6 and 7 Dec 2023
- Revision of framework and **SSbD criteria definition** by 2025



Coordination and Support Action from already adopted WP 2023: DIGIPASS (ongoing)

- Expected to start on 1 April 2024 until 2027
- Coordination and knowledge sharing across materials development communities to:
 - Establish an inventory of relevant existing collaborative materials data and information systems, network them and make them available for stakeholders
 - Establish common methodologies for data acquisition and knowledge generation
 - Case studies in different application areas and considering the entire value chain

Commission proposal for Strategic Plan 2025-2027: Innovative Materials for EU (I'M4EU)?

A new co-programmed partnership

Innovative advanced materials are engineered to have new or enhanced properties with superior performance relative to conventional (or raw) materials. They categorise as deep-tech, in line with the New European Innovation Agenda.

These materials provide for new uses essential for the green and digital transition of a resilient Europe. They include composite materials, nanomaterials and two-dimensional (2DM, one-atom thick) materials.

The partnership will focus on research, development and uptake (integration into innovative products and technologies) of a new generation of 'safe and sustainable by design' materials fit for the circular economy.

Commission proposal for Strategic Plan 2025-2027: Innovative Materials for EU (I'M4EU)

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Expected commitments from the private side..

- New association for such a partnership?
- Possible budget for partnership: 250M EUR for 3 years 25-27
- Leverage beyond? Commensurate private investments in a co-programmed partnership
- Estimated industrial leverage: 60% funding for IA, 100% RIA – additional activities from industry to match EU funding
- Stakeholder support (Advanced Materials Initiative, Graphene Flagship). Open for other likewise EU wide initiatives to join!
- Topics in WP remain open to partners external to the industrial association.

Advanced Materials Academy?

- Transfer of budget to European Institute of Innovation & Technology (EIT) for a competitive call between Knowledge and Innovation Communities (KICs)
- It is envisaged to continue funding this action in 2025-27
- Build on experiences of Batteries Academy, foresee synergies with Net Zero Industry Academies

Objectives:

- Enhance **education and training offer on advanced materials**
- **Develop skills** for existing and future workforces needed for Net Zero Industry Act, Raw Materials Act, Advanced Materials for industrial leadership

Cooperation with Joint Research Centre (JRC)?

- Using the Raw Materials Information System (RMIS) developed by JRC
- Analysis on **substitution of Critical Raw Materials** with a focus on advanced materials for the alternatives and **material efficiency**
- Generate in-depth knowledge on **substitution approaches, technologies available** as well as identification **lead countries** in developing the technology
- Foresight study on substitution needs with an R&I focus
- Develop a dedicated module on advanced materials of the RMIS

Coordination and Support Action for national funding agencies?

Coordination and Support Action (CSA) proposed for WP 2024 to develop synergy with national and regional initiatives in Europe on innovative materials

- Support to continued coordination between MS on advanced materials and 2D materials research agendas
- Support to ‘Advanced Materials for Industrial Leadership’
- Coordination also with EU/national level projects as relevant
- Assessment of economic security: technology leakage risks

Conclusion

- Communication « Advanced Materials for Industry Leadership » planned for first quarter of 2024
 - Research and Innovation Part
 - Industrial Policy Part
- Decision on a European Partnership under Horizon Europe expected before the end of the year (legal base: strategic plan 2025 to 2027)

Thank you



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