© European Union, 2024 | Image sources: © Ron Dale #438454294, © darshika #722830633, 2024. Source: Stock Adobe.com

#AdvancedMaterials

ADVANCED MATERIALS FOR INDUSTRIAL LEADERSHIP

Big Buyers Annual Event 24 April 2024

European Commission

Advanced Materials – what is covered?

- **Intentionally designed** and engineered materials to have:
  - **new or enhanced properties**, and/or
  - **targeted or enhanced structural features**

  to achieve specific or improved **functional performance**.
- Advanced materials include both:
  - **new emerging** materials from innovative manufacturing processes (high tech materials) and
  - materials that are **manufactured from traditional** materials (low tech materials).

Advanced Materials for Industrial Leadership, COM(2024) 98 final
https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM%3A2024%3A98%3AFIN

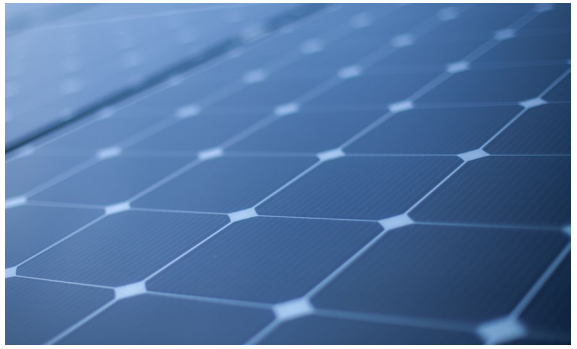
European Commission

Policy Context

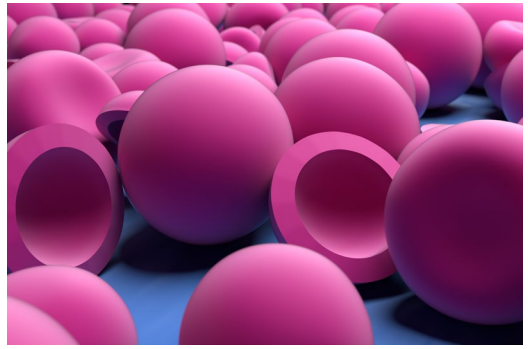
- **Key enablers & innovation drivers** for the **green and digital transition**
  - Applications in many areas across industrial sectors; e.g. energy, mobility
  - **Potential to substitute** certain critical raw materials
- Advanced materials **offer a wealth of solutions**
- **Increasing demand** expected for advanced materials
  - Improved **efficiency** and **performance**
  - Customer demand for **circular**, **safe and sustainable** products

European Commission

Examples of Advanced Materials

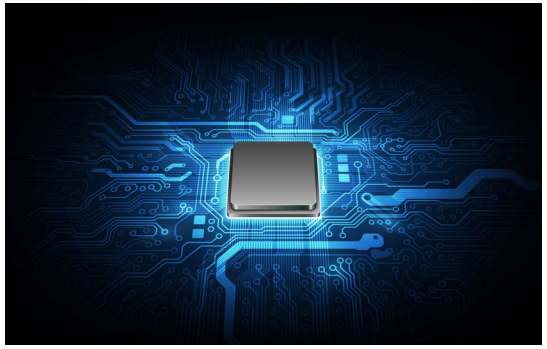


Metallic nanoparticles to enhance energy conversion in solar panels

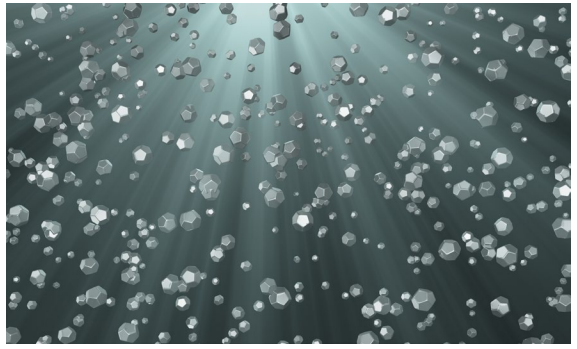


Thermochromic microcapsules absorbing and reflecting light

Sodium-ion based batteries storing energy using more abundant materials

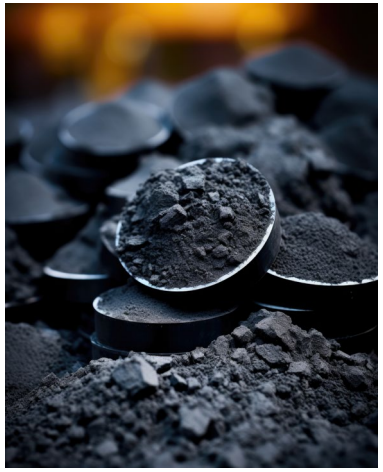


New materials 'beyond silicon' for the next generation of chip technologies



Elastomers and nanocrystals that enable flexible electronics for smart devices

Bio-based materials with increased insulation and circularity capacity



Recyclable carbon reinforced plastics for wind-mill blades, airplane wings or sports equipment.

European Commission

Objective

- Deliver on the green and digital transition
- Create a **dynamic and inclusive ecosystem** for advanced materials
- Strengthen the EU's **resilience** and **open strategic autonomy**

  - **accelerate** research & technology development in advanced materials
  - **fast track** the industrial uptake of advanced materials
  - **scale up** its innovation and manufacturing capacity

European Commission

The Strategy

Pillar I
Advanced materials R&I: a launchpad for the twin transition, EU resilience & open strategic autonomy

European Commission

The Strategy

Pillar I
Advanced materials R&I: a launchpad for the twin transition, EU resilience & open strategic autonomy

Pillar II
Fast track from lab to fab

European Commission

The Strategy

Pillar I
Advanced materials R&I: a launchpad for the twin transition, EU resilience & open strategic autonomy

Pillar II
Fast track from lab to fab

Pillar III
Increasing capital investment & access to financing

European Commission

The Strategy

Pillar I
Advanced materials R&I: a launchpad for the twin transition, EU resilience & open strategic autonomy

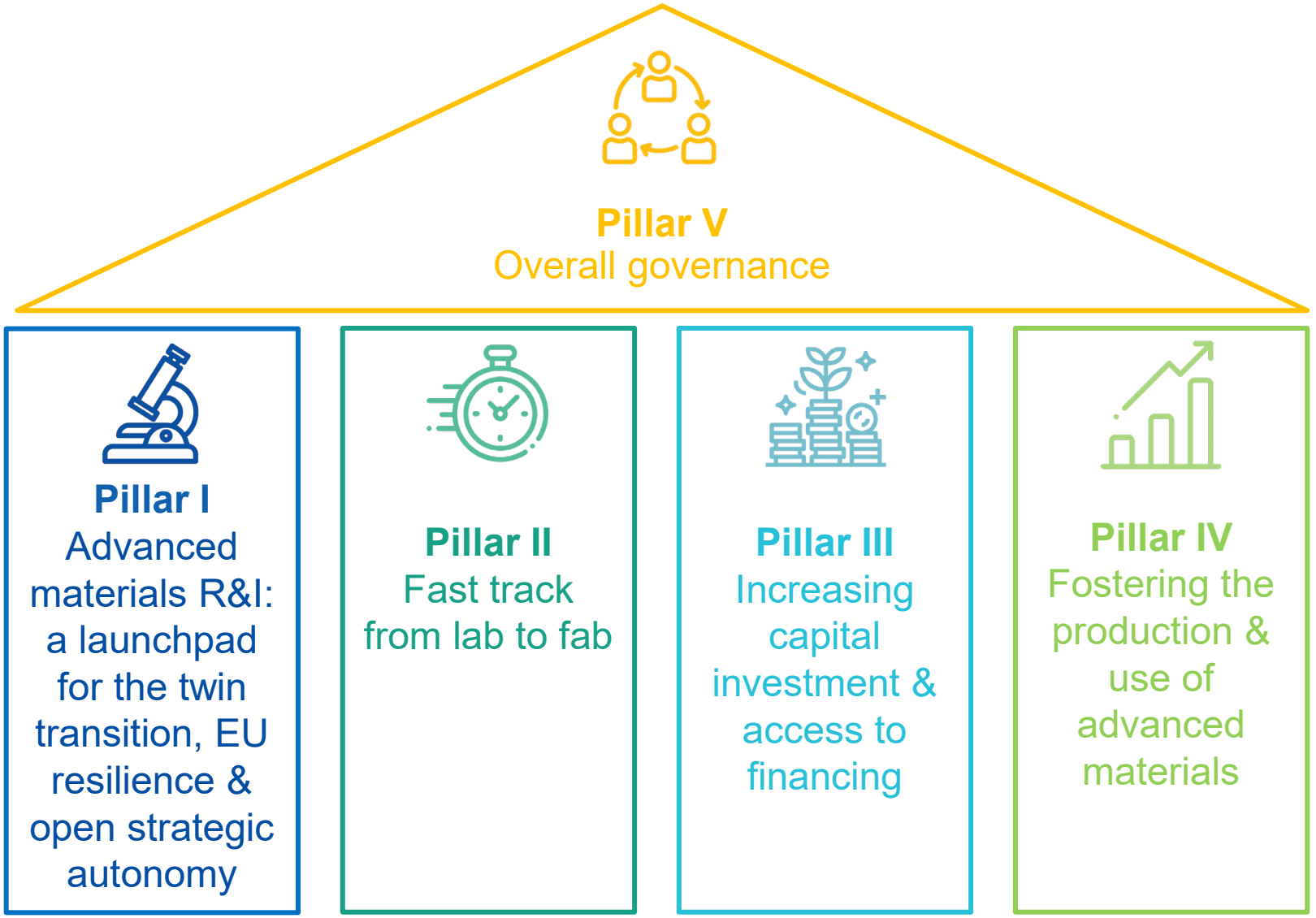
Pillar II
Fast track from lab to fab

Pillar III
Increasing capital investment & access to financing

Pillar IV
Fostering the production & use of advanced materials

European Commission

The Strategy



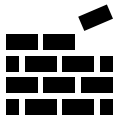
European Commission

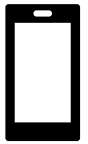
Priority areas

➢ Application sectors


Energy


Mobility


Construction


Electronics

➢ Cross cutting aspects

- Digitalisation of R&I in advanced materials
- Safe and Sustainable by Design

Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Renew and Recover

European Commission

Public Procurers

- Can play a leading role in steering markets and driving innovation.

- Should assess the value added of new enablers like advanced materials for the twin transition and EU's resilience and economic security.

European Commission

Thank you