

# Materials Governance, Co-creation, Impact, ... (Full title)

The Alliance for Materials (A4M) paper on Materials Governance and Valorization of the Impact of the future materials research in a “problem solving approach”

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# The Alliance for Materials (A4M)

The original initiators of A4M initiative are six European Technology Platforms with a strong material agenda in their respective strategies. These are: EuMaT, Suschem, Manufuture, FTC (textile), ESTEP, SMR (sustainable resources), integrated by the two main European materials associations: E-MRS and FEMS and the EMIRI IDI



## The way to

integrate the diversity of ideas in Materials developments across ETPs and other main stakeholders to create synergy and an integrated Materials R&D programme for Europe

ensure that the Industrial Value Chain acts as main driver for a credible integration of resources and players for speeding up exploitation and valorisation of materials research





# Opinion Paper on Governance and Strategic programming of Materials Research and Innovation in Horizon Europe

In February 2019, the A4M completed (and shared with the Commission) an Opinion Paper on future materials research.

This short review of the paper covers the chapters:

- Motivation – setting the stage for A4M
- Proposals for Materials Governance in Horizon Europe
- Co-creation: systemic approach towards sustainable society, including the citizens
- Some examples for “enabling materials, impact”.

The full paper can be downloaded from EUMAT

EUMAT website: [www.eumat.eu](http://www.eumat.eu)

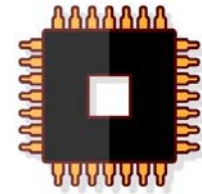


## A4M Paper: The starting point

It is widely believed that materials are an essential part of almost every innovation

Materials are addressed in most HORIZON EUROPE clusters, missions or partnership activities

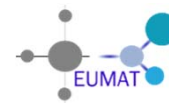
Advanced materials, manufacturing, processing are typical examples for cross-silo, communal R&D&I



**Advanced  
Materials  
Inside**



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## A4M Paper: Motivation

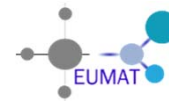
We believe that

- Advanced materials will be key enablers to reach policy objectives for sustainable growth, for facilitating the transition to low carbon footprints, and circular economy
- Key objective for developing materials: durability, energy efficiency, circularity

### **Special responsibilities and governance structures**

are needed in materials research that

- support synergies between application areas,
- avoid double funding,
- serve all stakeholders.



## A4M Paper: Proposals (1)

- A4M proposal: A single “entry-point” for all materials-related R&D&I challenges, inquiries, proposals, projects directly linked to more than a single specific sector.
- providing a complete overview of any Materials related activities serving multi-sectors
- linking basic material research (Pillar I) with applied material research (Pillar II)
- A4M welcomes the setting-up of the new EU Commission Unit (F4) within PROSPERITY, i.e. Materials for Tomorrow, and hopes that this Unit would act as the entry point.
- Furthermore, the entry point should also assure proper Materials governance “beyond PROSPERITY”: a commission-wide on-line information hub where ALL materials-related programmes and projects would be registered, so that information is efficiently disseminated to interested stakeholders and broadly used, where it best fits.

## A4M Paper: Proposals (2)

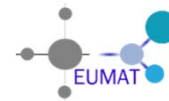
- A4M supports the EU Commission in setting new or adapted rules, tools and data bases for the sharing of materials information from one thematic area to another, across clusters and missions.
- Let's create a real Open Science approach within the different scientific and technological groups/consortia, active in the programme, creating cross-cutting benefits, synergies and optimal use of resources, reducing the time to market.

A4M has a vast materials and market experience available through its member organisations, and thus offers to act a materials reference partner to the Commission. A4M welcomes the possibility to take an active role in the upcoming Strategic Programming exercise, supporting the Commission in setting up and carrying out Materials Governance and Co-creation in Horizon Europe.

## A4M Paper: Co-Creation (1)

For A4M, co-creation means

- Systemic approach towards sustainable society including the citizen
  - Involvement of all parties;
  - Besides technology and economics, environmental and societal aspects are to be seen,
  - Co-creation considers the societal needs of the different population groups **ALSO OUTSIDE THE HIGH-TECH COMMUNITY**
  - ..not „only“ stakeholders, customers, end-users
- 
- Materials R&D&I requires robust communication about technology research value and its impact on citizens.





## A4M Paper: Co-Creation (2)

Co-creation in this sense is not new to the A4M community. A wide range of initiatives is running already. To name only two:

- The KIC EIT Raw Materials works with schools, museums, entrepreneurs, consumer advocates, citizens, policy makers, and regulators;
- The NOBEL project raises awareness for emerging medical technologies and healthcare for citizens,

The A4M approach to co-creation:






- Multi-actor engagement process;
- Well-managed feedback loop with citizens
- Addressing long-term effects of technology

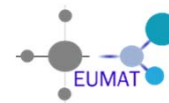
**A4M welcomes the opportunity to run one or several pilot projects for technology-societal co-creation (H2020 / Horizon Europe)**

# A4M Paper: Impact

The A4M paper lists a sizeable number of examples for strong impact of MATERIALS to the Sustainable Development Goals.

Just 3 examples from Mobility, Energy and Health:

SDG	Challenge	Materials	Technologies, Trends	Relevance / Impact
 	The CO <sub>2</sub> emissions of cities is too high... Batteries are dominated by Asia...the car industry (13 Mio jobs in EU) is depending on them	Materials for e-mobility (batteries, fuel cells)... electrodes, membranes, catalysts; ... Low wear materials, Nanomaterials... Low viscosity lubricants	Use of electrical vehicles Reduction friction and wear Use of biofuels Lightweight materials... Nanotechnology Modelling & characterization	Friction losses in electric cars are 48,5% lower than in combustion engine (IC) cars <sup>4</sup> and has nearly no CO <sub>2</sub> emissions during use phase (during production phase are higher than IC Cars). <sup>13</sup> Share of electrical vehicles might reach 30% in 2030
 	During this century the climate change imposes use of renewable energy for industry , cities and transport	High strength light weight Solar absorber coatings coatings for reflectors, High T <sup>o</sup> C resistant thermal fluids. Advanced materials and lubs for wind energy. Low friction coatings	Wind mills. Concentrated solar thermal, photovoltaics Geothermal CO <sub>2</sub> capture and CCS	Renewable energy (eg. solar, wind) has increased its share... potential to reach 50%... EU advanced materials for low carbon energy industries represent a turnover of €30 Billion...
	Defeating diseases (eg. cancer and Alzheimer)	Quantum and nano materials, biosensors, biocompatibility... sensor arrays .. Drug delivery... bioactive membranes	Nanomedicine Brain analysis, cognitive research, molecular biology.. AI, precision medicine...	The health cost in Europe is 10% of the GDP. 18M new cancer cases are diagnosed each year almost 50% of them will be lethal. <sup>10</sup>





# The A4M editors, contributors, and approvers:



## ANNEX: ENTITIES SUPPORTING THE DOCUMENT

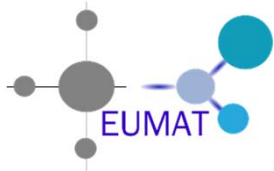


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Note: a) Manufacture Platform, agree with the content of the position paper and will act as observer; b) EDA agrees on the content of the Position Paper

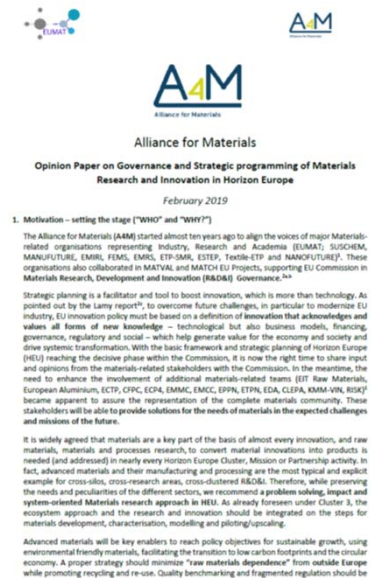


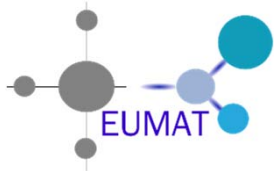


## ENF EuroNanoForum- EUMAT Workshop on Governance

### Summary: Key messages of the A4M Opinion Paper

- A4M supports a strong, high-quality, comprehensive materials governance
- Proposal-an “entry-point” for materials-related R&D&I challenges, inquiries, proposals, projects directly linked to more than a single specific sector
- commission-wide on-line information hub where ALL materials-related programmes and projects would be registered
- a real Open Science approach within the different scientific and technological groups/consortia, active in the programme





## ENF EuroNanoForum- EUMAT Workshop on Governance

### Summary: Key messages of the A4M Opinion Paper

- **Citizen involvement**: highly welcome, in part already practiced by A4M
- A pilot project for technology-societal co-creation?
- **Cross-cutting impact**: we have listed quite a number of examples already today
- A4M welcomes the possibility to take an active role in the upcoming **Strategic Programming exercise**
- A4M invites the EU Commission to consider launching a **Coordination Initiative** in support of these activities.

