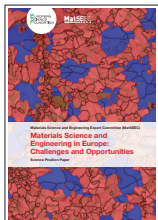


Materials Science and Engineering Expert Committee (MatSEEC)

MatSEEC is an independent science-based committee of the European Science Foundation with over 20 experts active in materials science and its applications, materials engineering and technologies and related fields of science and research management.

The aim of MatSEEC is to enhance the visibility and value of materials science and engineering in Europe, to help define new strategic goals, and to evaluate options and perspectives covering all aspects of the field.

Science Position Papers



Materials Science and Engineering in Europe: Challenges and Opportunities

offers a synthesised view of selected, yet representative fields for engagement for materials science and engineering (MSE) in the next ten years. It provides advice to

European stakeholders, such as the European Commission and national funding agencies, concerning the directions of MSE related activities. The ultimate aim is to enhance the competitiveness of Europe both in academic and industrial aspects of MSE and hence to tackle the challenges faced by European society.



Metallurgy Europe - A Renaissance Programme for 2012-2022

represents the appeal to Europe to coordinate and increase its efforts across the entire materials value chain of metallurgy – from material discovery, alloy design, processing, optimisation,

to scale-up and in-service deployment. This will enable European companies to accelerate significantly the pace of innovation in metallurgy. MatSEEC recommends the creation of a 'Metallurgy Europe' research and development programme, based on substantial and sustained

contributions from the EC (Horizon 2020), national funding agencies, EU industry, EIRO forum partners and academia. This initiative has provided technological guidance in various policy making circles and has led to the European Commission's most recent roadmap on metallurgy (2014).



Materials for Key Enabling Technologies

emphasises how materials can strengthen the innovation chain in Europe by creating incubation centres and private-public infrastructures including universities, research centres and industry. Key enabling technologies represent

well-chosen strategic fields, which are vital for European industry.

This document has become a key reference in the definition process of several national programmes. For example, the UK's Engineering and Physical Sciences Research Council (EPSRC) specifically refers to the MatSEEC report *Materials for Key Enabling Technologies* to illustrate why 'Photonic Materials and Metamaterials' are an important part of their strategic research portfolio.



Computational Techniques, Methods and Materials Design

describes how computational methods and techniques are at the heart of modern materials research and development. Materials science and engineering is becoming a typical example of "simulation-

based science and engineering", where powerful, predictive theoretical and computational methods are used: to facilitate the design of materials with new functionalities and desired properties; to design and optimise the processing routes for materials preparation, ranging from chemical reactions for growth to long-term annealing and recovery routes of materials; and to analyse and to interpret the experimental characterisations, often based on sophisticated probes.

MatSEEC: Partner for Cooperation

“Our own standards of living and the quality of our societies depend on our understanding and utilisation of materials. Materials Science and Engineering are the fundament for over 70% of all technology based innovation today.

MatSEEC provides science-based insight and foresight for today’s decision makers.”

Dr Patrick Bressler, MatSEEC Chair

- Contribution to the consultation process for the next Common Strategic Framework for EU Research and Innovation funding (Horizon 2020)
- Contribution to the SET-Plan Material road mapping exercise organised by DG Energy and DG Research of the European Commission
- Contribution to the Metallurgy Roadmapping exercise organised by DG Research of the European Commission
- Interactions with ERC, ESFRI and the European Technology Platform for Advanced Engineering Materials and Technologies
- Interaction with the US National Science Foundation (Materials World Network initiative)
- Input to the Mapping of the European Research Infrastructure Landscape (MERIL)
- Input to the Reports of the High Level Group on Key Enabling Technologies of DG Enterprise and Industry

Future MatSEEC

**Roadmaps and foresight for Europe:
From the lab to the market**

There is a need for an independent Materials Science and Engineering Expert Committee. It must cover the value chain, innovation chain and translate for the general public.

MatSEEC Conference 2014

**WELCOME Hotel - Karolinenplatz 4,
Darmstadt, Germany
25-26 September 2014**

Special Session for Future MatSEEC: future partners are invited.*

*Interested in joining MatSEEC or if you have any questions, please contact us.

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