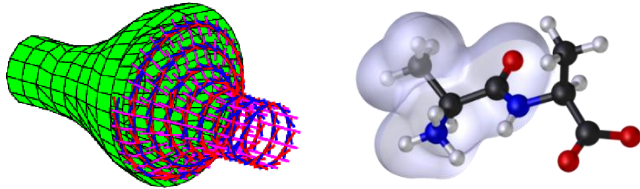


EuMaT

European Technology Platform for
Advanced Engineering Materials and Technologies

EuMaT Working Group 1: Materials Modelling



Challenges:

To develop modern and highly efficient simulation techniques to design new materials, improve material properties, optimize and control manufacturing processes and to develop new cost and environmental efficient products. Need to develop experimental data bases, multiscale method and algorithms for data mining.

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EuMaT Working Group 3: Nanomaterials and Nano- Assembled Materials

Challenges:

- Multifunctional (sensing, actuation, low-friction and anti-wearing, improved wettability for painting, etc.) nano-assembled materials for components and micro-systems.
- Recyclable and high performance polymer nano-composites, Metal Matrix materials and advanced metal-polymer-ceramic composites;
- Engineered nanostructured surfaces,
- Coatings for harsh environments (high temperature, strongly oxidizing, highly wearing)
- Modelling of quantum-properties of nanostructures such as nanowires and CNT, nanorods, nanoparticles. Microsystems including nano-objects of novel functionality.

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EuMaT Working Group 2: Materials for Energy

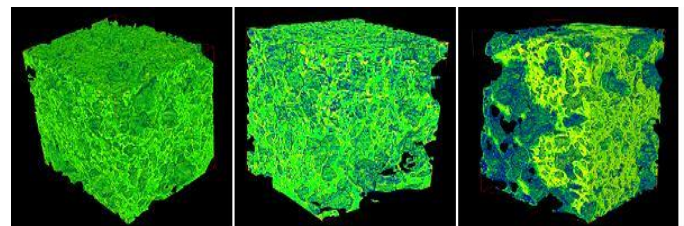
Challenges:

Structural and functional materials for low carbon energy technologies, e.g. for dispatchable thermal power or non-dispatchable wind and solar, including materials for energy conservation, transmission and storage - to give improved performance and durability in service.



Contact: Prof John Oakey
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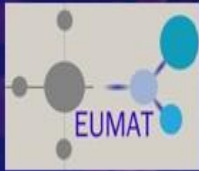
EuMaT Working Group 4: Knowledge-based Structural and Functional Materials



Challenges:

Advancing in the development of technologies for new structural and functional materials, which will create innovative solutions for different key industrial sectors, such as automotive, aerospace, healthcare and sustainable energy.

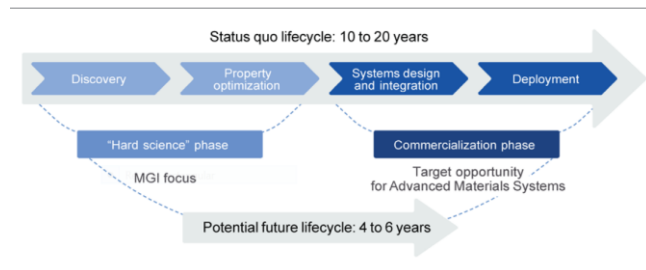
Contact: Arnaldo Moreno
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EuMaT Working Group 5: Life cycle, Impacts, Risks

Challenges:

- Risks of innovation, of non-performance or performance below expectations.
- Risk of adverse/unexpected effects and impacts.
- Risks over the life-cycle of products and technologies.
- Project risks, especially in innovation, R&D and new technologies oriented projects.

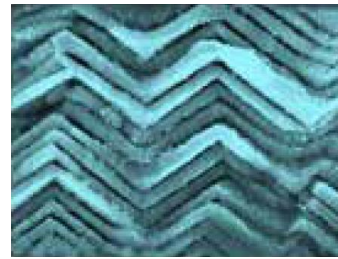


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EuMaT Working Group 6: Materials for Information and Communication Technologies (ICT)

Challenges:

- Health (diagnostics, monitoring)
- Transportation (safety, efficiency, reduction of pollution)
- ICT (integrated components)
- Energy (energy harvesting, energy conversion & management)
- Environment & Security (detectors, sensors, NDE)



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EuMaT Working Group 7: Biomaterials

Challenges:

To contribute to the definition of the European research and funding strategies for increasing the competitiveness of Europe in the field of Materials for Health.

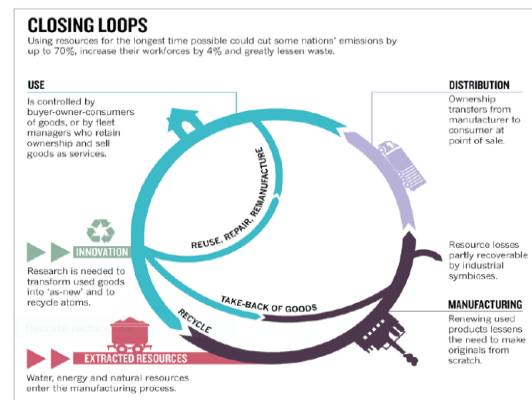


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EuMaT Working Group 8: Raw Materials for a Circular Economy

Challenges:

Moving from the traditional, linear 'make, use, dispose' economy to a circular economy, keeping the value of products and minimizing the waste, material and energy usage, to achieve economic, social and environmental benefits.



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