



M-ERA.NET Transnational Call 2012

Guide for Proposers

20 September 2012

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1. What is M-ERA.NET

M-ERA.NET is an EU funded network which has been established to support and increase the coordination of European research programmes and related funding in materials science and engineering. Between 2012 and 2016, the M-ERA.NET consortium will contribute to the restructuring of the European Research Area (ERA) by operating as a single innovative and flexible network of funding organizations.

M-ERA.NET will complement existing instruments and contribute to EU policies whilst supporting the exploitation of knowledge along the whole innovation chain from basic research to applied research and innovation.

By stimulating scientific excellence and the creation of a new innovation oriented economy, M-ERA.NET will deliver lasting impact and significant breakthroughs. It aims to develop a long-term cooperation between funding organizations across the EU.

What we offer:

M-ERA.NET will provide a central forum where substantial pan-European funding and research programmes can be aligned.

The consortium aims to address societal challenges and technological needs with an interdisciplinary approach, creating a flexible umbrella structure to allow coverage of topics in materials science and engineering. As a core activity, a series of joint calls for transnational RTD projects will be implemented. These calls will provide the European RTD community the opportunity to access coordinated funding across Europe and gain access to leading knowledge world-wide. Over four years, the M-ERA.NET consortium will mobilise substantial national and regional budgets in the range of €150M, to support the European RTD community. Cooperation with partners outside Europe is targeted to build a global network of public funding programmes.

Why?

Materials science has become one of the most dynamic engineering disciplines, impacting modern society with applications ranging from domestic appliances to electronics and energy production. In recent years, significant efforts have been made to ensure industry can meet the challenges it currently faces, in terms of the new materials being introduced and the stronger integration of products and processes required.

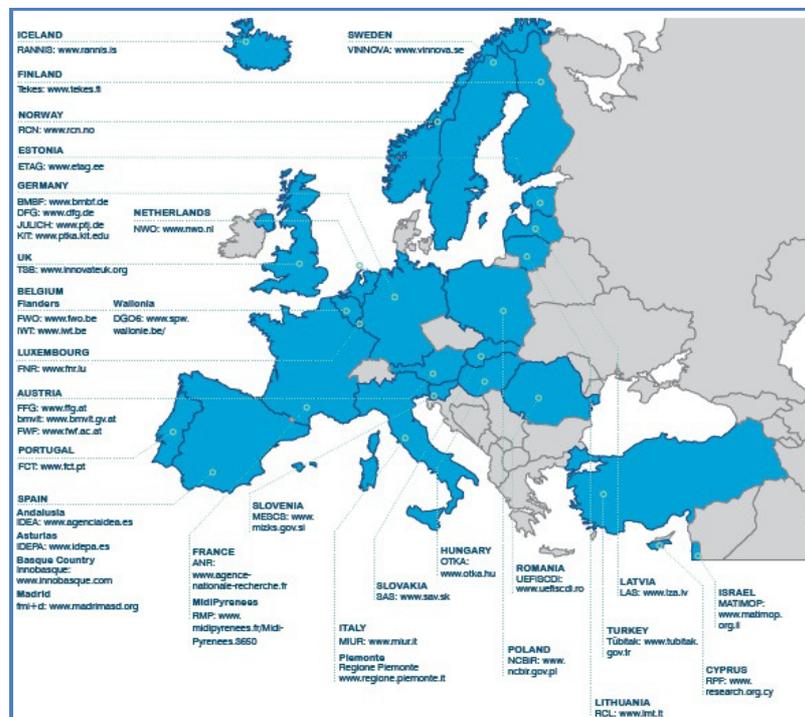
Europe has a wealth of academic and industrial expertise and to ensure it stays at the forefront of developments it is crucial that a strategic programme is established that will help develop projects with impact on a global scale.

Strategic impact

Improving the coordination and cooperation of research funding programmes will reduce the fragmentation across Europe and align programme strategies for transnational collaboration, eliminating cross-European programme duplication. M-ERA.NET will enable easy access to collaboration between leading research partners and industry across and also outside Europe and create a powerful network to tackle European and global challenges. Increasing interdisciplinary cooperation with a series of joint calls and activities will enable EU researchers and industry to access previously inaccessible new markets, creating a new innovation oriented economy. The annual joint calls and other joint activities will encourage key players as well as newcomers in transnational projects and SMEs to develop a pan-European partnership. This increased interdisciplinary cooperation and exploitation of European and international roadmaps will create a new dynamism in the field of materials science and engineering whilst stimulating the generation of leading knowledge along the innovation chain.

The M-ERA.NET Consortium

M-ERA.NET started, in February 2012, as a network of 37 public funding organizations, of which 29 are national and 8 regional, from 25 European countries. M-ERA.NET aims to identify further relevant European programmes and develop links with partners outside Europe. Funding organisations decide individually about their participation in transnational calls; see Annex 2 for funding organisations in the Call 2012.



2. Structure of the Coordinated Call 2012

The objective of the coordinated M-ERA.NET call is to enable transnational R&D projects to be by partners receiving funding from the regional/national programmes.

Figure 1 shows the schematic workflow of the coordinated call. Benefits are combined in one approach: On the one hand the regional/national funding organizations apply their own well-established funding rules and procedures known to their applicants, and on the other hand the M-ERA.NET provides transnational coordination expertise:

- The announcement and dissemination activities of the call are performed by the M-ERA.NET network;
- The eligibility of funding applications will be checked by national/regional funding organizations according to the rules defined by their respective funding programmes;
- There will be a centralized evaluation performed by independent international evaluators;
- The coordination of the evaluation and funding decisions is performed by a M-ERA.NET Steering Board at the Selection Meeting.

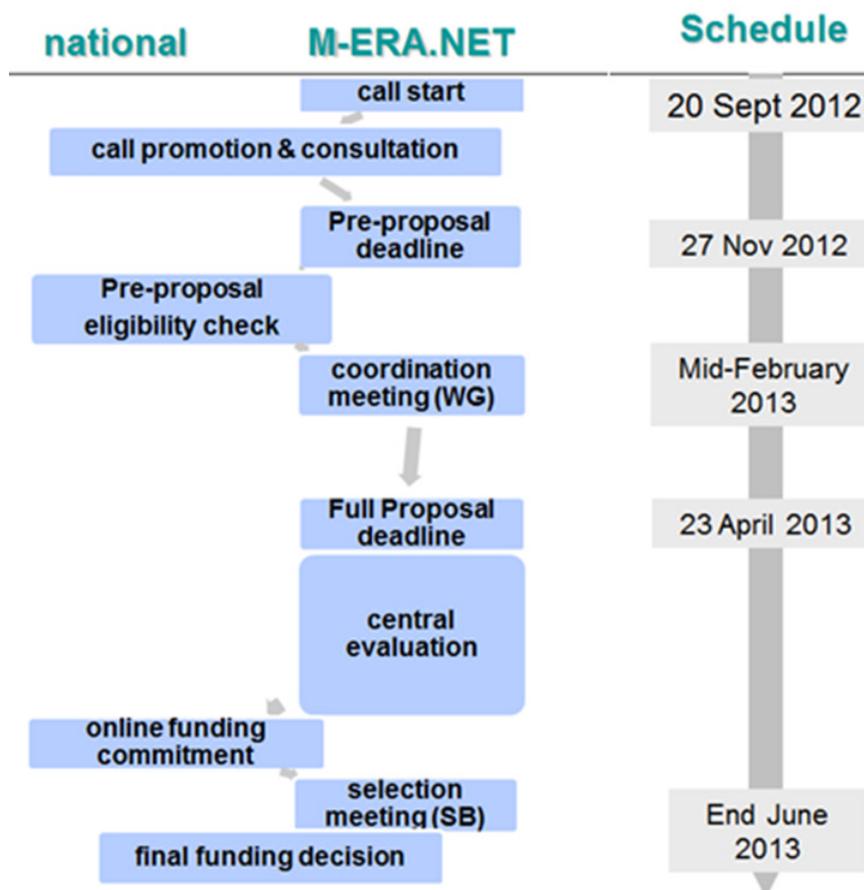


Figure 1 - Workflow of the coordinated call

3. Call Announcement

3.1. Objectives and Topics

The aim is to fund transnational high risk R&D projects addressing Materials Science and Engineering including micro and nano technologies, production processes and technologies. The specific objectives for Call 2012 are increasing synergy, support for innovation chain, international cooperation, multidisciplinary and socio-ecological benefits. Proposals will typically be smaller than proposals submitted to the EU Framework Programme.

This call supports the following topics:

1. Integrated Computational Materials Engineering (ICME);
2. Secondary Raw Materials;
3. Design of New Interfaces, Surfaces and Coatings;
4. Hybrid Composites;
5. Materials for Energy Systems

As horizontal themes, processing, cooperation between industry and academia and international cooperation outside M-ERA.NET are highlighted.

A more detailed description of the topics is available in Annex 1.

The individual regional/national thematic programme focus (e.g. basic research or applied research) and funding rules (3.2.) must be taken into account.

3.2. Funding rules

Each project partner has to apply individually for regional/national funding. For each project partner the funding rules of the respective regional/national programmes apply. This means that depending on the respective national/regional funding rules some project partners have to submit additional national/regional proposals or information on national/regional level.

To obtain detailed information about the specific funding rules and programme priorities we strongly recommend contacting the respective regional/national funding organizations (see Annex 2 for details).

3.3. Eligible project structure

- Project consortia consisting of at least 3 parties from 2 different participating countries in the M-ERA.NET call 2012, or 2 regions in different countries (see Annex 2 for details) can apply for funding. The consortia may involve as many partners as necessary.

- Proposal is recommended by a minimum of 2 funding organizations from 2 different countries of the M-ERA.NET call consortium.
- Proposal is recommended for Full Proposal submission by M-ERA.NET after Pre-proposal stage.
- SMEs, Large companies, Academic research groups, universities, public research organizations or other research organizations may also participate according to their regional/national financing regulations.

Small to medium projects (4 or 5 partners) are expected. The roles of each partner within the consortium should clearly add value to the objectives of the proposed project.

Depending on the nature of the project the consortium must demonstrate how it will exploit (for each partner) the expected results.

National/regional funding rules apply; therefore in some cases only certain topics or types of organizations are eligible (e.g. some programmes fund only industrial but no academic partners, basic and/or applied research).

A consortium agreement between the project partners is required for funding (after final funding decision), although the principles of agreement should be clear from the application form. The purpose of the consortium agreement is to clarify:

- the responsibilities of the partners
- decision processes inside the project
- management of any change of partners
- how to exploit and/or commercialise the results (for each partner)
- IPR issues

3.4. Project budget

No overall limits have been defined on M-ERA.NET level but national/regional limits regarding the available funding will apply.

3.5. Project duration

The maximum project duration may not exceed 36 months. National/regional limits regarding the duration of projects will apply.

3.6. Dates and deadlines

Date	Step	Place
20 September 2012	Publication of the joint call	
27 November 2012 12:00 noon Brussels time	Deadline for submission of Pre-Proposals a) Pre-Proposals and b) National/regional Funding Applications, if necessary*	a) Online (via IT tool) b) regional/national agencies
mid-February 2013	Feedback to applicants	
23 April 2013 12:00 noon Brussels time	Deadline for submission of: a) Full Proposals and b) National/regional Funding Applications, if necessary*	a) Online (via IT tool) b) regional/national agencies
early June 2013	M-ERA.NET feedback to applicants	
summer 2013	Contract negotiations for selected proposals on national/regional level	regional/national agencies
summer/autumn 2013	Start of funded projects	

** contact your national/regional funding organization*

4. Application process

The M-ERA.NET application process will be a 2-step procedure: pre-proposal and full proposal.

1. Before submitting a proposal, all project partners must contact their respective regional/national programme funding organizations in order to discuss the project line-up and the funding conditions.
2. A pre-proposal is mandatory. It has to be submitted by the coordinator through an online application form available at www.m-era.net
3. The regional/national organizations might carry out their own eligibility check (or evaluation) based on the pre-proposal and the respective regional/national funding application. Applicants will be provided with feedback after the review of their pre-proposal, including a recommendation to submit (or not) a full proposal.
4. The proposal has to be recommended for Full Proposal submission by M-ERA.NET after Pre-proposal stage to be eligible.
5. The full proposal must be submitted by the project coordinator through an online application form available at www.m-era.net. At the same time regional/national funding applications must be submitted to each of the involved funding organization according to their specific rules.
6. The regional/national agencies might carry out their own evaluation based on the full project proposal and the respective regional/national funding application. There will be a centralized evaluation performed by independent international evaluators which will result in a ranking list. At the M-ERA.NET selection meeting parties will agree on the projects that are going to be financed based on the ranking list and the availability of finance resources.
7. M-ERA.NET recommends the funding of projects to the respective funding organizations. The regional/national organizations make the final funding decision.

4.1. Stage 1: M-ERA.NET Pre-Proposal

The pre-proposal gives an overview on the whole project. It is mandatory and has to be submitted in English by the project coordinator through an online application form available at www.m-era.net.

After eligibility check/evaluation of pre-proposals M-ERA.NET gives advice to the project coordinators and recommends/does not recommend the submission of full proposals.

4.2. Stage 2: M-ERA.NET Full Proposal and regional/national funding applications

The full proposal gives an overview of the whole project and describes all national project parts. In addition to the full proposal (on-line submission) the corresponding regional/national funding application form may be requested by the respective funding organization according to their respective programme rules. To receive funding, the national parts of the project must fulfil their national/regional criteria. This will create different

- ▶ *Project objectives stated in the Pre-proposal cannot be changed in order to allow the identification of evaluators based on the Pre-proposal.*
- ▶ *Other changes from Pre- to Full Proposal should be avoided. In any case, changes from Pre- to Full Proposal stage have to be coordinated with all involved funding organizations by the consortium leader!*

This means that changes regarding partners, content, costs, funding or consortium have to be communicated to all involved funding agencies. The consortium leader is responsible to coordinate and ensure the acceptance of these changes by the involved funding agencies.

submission and financing situations for partners from different countries.

4.3. Confidentiality

Proposals and any information relating to them (including the names of the evaluators) will be kept confidential and only be accessible to the organizations involved in the funding. Proposals will not be used for any purpose other than the evaluation of the applications, making funding decisions and monitoring of the project. International experts are required to sign a confidentiality agreement prior to evaluating proposals.

5. Evaluation

M-ERA.NET aims at providing a transparent, fast and straight forward assessment of the submitted project proposals. Thus, the regional/national evaluation will be carried out in cooperation with M-ERA.NET.

5.1. Pre-Proposal:

5.1.1 Eligibility check and evaluation criteria:

At M-ERA.NET level:

- Date and time of receipt of Pre-proposal on or before deadline
- Presence of requested M-ERA.NET Pre-Proposal form
- Minimum of 3 partners from 2 different participating countries or region participating the call 2012
- Pre-proposal is recommended for submission for a full proposal by all the funding organizations from the countries/regions involved

At National/regional level:

- Programme regulations observed if applicable (e.g. presence of requested national/regional Proposal forms, ...)
- Funding budget available
- Assessment of relevance to the national/regional funding programme

5.1.2. Result of Pre-Proposal assessment:

At national/ regional level the assessment of Pre-Proposal results in one of the Recommendations, to be communicated to the applicants:

- *Recommended for submitting the Full-Proposal(including requirements and/or potential comments for improvement)*
- *Not recommended (motivated - mandatory comments)*

5.2. Full Proposal:

5.2.1 Eligibility check:

At M-ERA.NET level:

- Date and time of receipt of proposal on or before deadline
- Presence of requested M-ERA.NET Full Proposal form
- Minimum of 3 partners from 2 different countries or regions participating in the M-ERA.NET Call 2012
- Proposal is recommended for submission for a full proposal by all the funding organizations from the countries/regions involved after the pre-proposal assessment

At National/regional level:

- Programme regulations observed if applicable (e.g. presence of requested national/regional Full Proposal forms, ...)
- Funding budget available

5.2.2. Result of Full Proposal Eligibility check:

At Full Proposal stage only in exceptional and very well justified cases proposals recommended for funding by M-ERA.NET central peer review can be rejected by individual funding organizations. Eligibility check of Full Proposal is done in parallel to the central evaluation.

5.2.3. Evaluation of Full Proposal:

The Full proposal evaluation is carried out as a central evaluation by independent experts.

The M-ERA.NET Call 2012 Evaluation Procedure:

- *Individual written assessments: 3 individual and independent written assessments including scoring for each Full Proposal provided by selected and agreed experts*
- *Compilation of individual assessments: 3 individual assessments are compiled by one of the 3 experts (= rapporteur). The compilation consists of peer review report and scoring. All experts who provided individual written assessments confirm the compilation and consistency of peer review report and scoring.*
- *Ranking list of recommended projects is based on the scoring*
- *Involved funding organizations meet for a selection meeting to assemble and commit themselves to the final list of selected proposals (= selection list); feedback to applicants is agreed (peer review report, national comments if applicable, ...)*
- *If there are big differences in the full proposal compared to the recommended pre-proposal and/or the eligibility criteria are not fulfilled the full proposal may be rejected without evaluation*
- *The names of the independent experts will be kept confidential*

The M-ERA.NET Call 2012 Evaluation Criteria for Full Proposal:

The full proposals will be evaluated according to the following criteria:

- Scientific and technical quality
- Implementation
- Impact

Evaluation criteria, scoring and thresholds are described in Annex 3.

6. Decision

6.1. Decision process

The final funding decision for the projects will be taken by the involved funding organizations. After the selection meeting M-ERA.NET informs the project co-ordinator (applicants) about the funding recommendation.

6.2. Funding

6.2.1. Contract

Funding contracts are signed directly between the project partners and their national/regional funding organizations.

6.2.2. Payments and Start of projects

Depending on the national/regional regulations, a pre-condition for transferring the first funding instalments might be the existence of a consortium agreement that also includes IPR related issues.

As the national funding contracts may not all become effective at the same time, the project parties

- usually do not receive the instalments,
- usually are not reviewed/monitored on national/regional level

at exactly the same time. However, the M-ERA.NET consortium will help to minimise these gaps.

7. Monitoring

7.1. National/regional project review

The progress of each individual contract will be monitored by the respective regional/national funding organization through specific project review processes.

7.2. M-ERA.NET Reporting

Apart from the regional/national project review, the transnational cooperation aspects will be monitored on M-ERA.NET level, e.g. by using online questionnaires.

7.3. Change in active projects

Any substantial change in an on-going project must be reported immediately to the involved funding organizations. The project partners should be aware that changes might have effects on funding.

8. Dissemination

A reference to M-ERA.NET is requested in publications, exhibitions, lectures and press information concerning results of the projects.

9. Support

Frequently Asked Questions (FAQ) are listed in the website (www.m-era.net). In addition, all Funding Organizations participating in the Call will provide assistance to project proposers in case of questions.

Annex 1: Thematic priorities for Call 2012

1) Integrated Computational Materials Engineering (ICME)

Technical content/scope

Current developments in combinatorial synthesis and high-throughput or high-accuracy characterisation of materials as well as the prediction of materials properties by novel high-throughput simulation allow for a faster development of materials targeted to both enhanced performance and specific life-cycle needs. A skilful combination of these approaches in terms of Integrated Computational Materials Engineering (ICME) will lead to significant improvements in e.g. the prediction of phase stability in multi-component materials, new approaches in interface engineering and the substitution of strategic materials. This combines approaches which have progressed strongly over the last decade. The systematic combination of these approaches can accelerate materials development and unify design and manufacturing.

The proposals should address each of the following themes:

1) modelling

- development of computational tools based on materials physics (e.g. intelligent DFT-based scale bridging, efficient solvers for microstructure-based simulation), or
- microstructure-based materials processing models (e.g. efficient parallel computing, inverse modelling approaches), or
- direct modelling of experiments (e.g. highly accurate or time dependent 3D experiments)

2) properties and applications

- specific materials properties (e.g. toughness, corrosion, thermal conductivity, magnetic properties), or
- performance in manufacturing, processes and applications (e.g. materials processing behaviour (e.g. during forming or welding), in-service properties, recyclability)

3) experimental data

- high-accuracy, atomic resolution methods (e.g. 3D atom probe, aberration corrected electron-microscopy), or
- high-throughput state-of-the-art methods (e.g. combinatorial synthesis with in-situ characterisation), or

- time-dependent 3D structural evolution analyses (e.g. in-situ x-ray microscopy, diffraction contrast tomography), or
- high throughput microstructural characterisation at appropriate length scales, or
- high throughput material properties characterisation and data consolidation

Expected impact

- Building and strengthening a common European research community in the area of Integrated Computational Materials Engineering.
- Improved predictive power of materials properties and applications.
- Establishment of resource efficient, well-targeted and high-throughput materials design and processing concepts.
- Increased competitiveness of the European industry by cost saving in materials design and processing and a shortened time-to-market for new materials with advanced properties.

The particular subject of the proposals should deal with a combination of concept-driven research and need-driven research in order to contribute to the innovation chain approach of M-ERA.NET.

With funding **concept-driven research** M-ERA.NET intends to boost the current state of knowledge in topics that are fundamental in nature and that simultaneously constitute key bottlenecks for materials improvements, processing and manufacturing in a wide range of application areas. To address this aspect the proposals should clearly identify

- the key bottleneck to be addressed,
- the model system chosen for the study,
- the methodology to generalise the approach taken,
- the coupling of these ‘modelling’, ‘properties and applications’, and ‘experimental data’ themes.

The aspect of **need-driven research** should reflect demands of society that are anticipated to require solutions in the next decades. To address this aspect the proposals should also clearly identify

- the rationale for research in the area,
- the boundary conditions (e.g. societal, application, engineering, design conditions) relevant to the topic,
- the expected leverage effect of the approach taken, the contribution of the different scientific disciplines that are involved, and
- the contribution to increase resource efficiency in materials design, manufacturing and different applications.

Target groups

This topic is targeted to two groups in the innovation chain: basic research and applied research. The topic will be broadened towards industrial r&d in future calls. Consortia focusing only on basic research or only on applied research are also eligible. The establishment of a strong collaboration between research entities and further networking is strongly encouraged.

2) Secondary Raw Materials

Technical content/scope

The availability of raw materials in Europe is limited; hence, sustainability of our industries is at risk. Any raw material entering Europe should be used to its limits and not be re-exported without full beneficiation of its value. Secondary raw materials can “travel” from one industry to have a second life in another.

The objective is to develop new knowledge and innovative technologies for the re-use of materials and more efficient usage of waste materials.

The proposals should address the theme of secondary raw materials: those processed (beneficiated) through recovery at the end of a product life cycle and used in new first tier applications. The scope and technical areas addressed should include material innovation, efficient processing, manufacturing and use of materials, life-cycle engineering (establishment of a structured approach). Throughout the whole product life-cycle resource- efficiency (reduce waste, increase yields) should be maximized. New intelligent uses of industrial wastes (e.g. slags, red mud, etc.) will be encouraged to add value to the waste management and processing stages of the product life cycle. Efforts should be put on converting wastes into byproducts, its subsequent classification and market use. New ideas on environmentally friendly product design and design for recyclability are also encouraged. Both innovative material solutions and processes should be considered as well as the valorisation aspect. Mainly for valuable, critical and strategic metals the maximum added-value of recycling should be addressed.

Complementarities with other initiatives in the field should be addressed (eg. EIP raw materials, FP7 funded projects, Waste Framework Directive).

Expected impact

- (i) Whole research chains from advanced (ab-initio) fundamental research to innovation on new processes or industrially proven ones.
- (ii) To create new and maintain established materials industries in Europe through the full development of the raw materials innovation chain including processing and to increase the synergy and collaboration between different industrial sectors as potential users.
- (iii) A second tier use of raw materials, or as a source of energy, at the end of a product life when their economical recovery is limited.
- (iv) To promote the ecodesign of products or the design for X (X= reuse, recycling) and, subsequently, the strategically convergence with the European Waste Hierarchy;

- (v) Awareness of society on the positive impact of the re-use/recycling of secondary raw materials through the improved life-cycle of products (i.e. less waste dumps).
- (vi) At this stage international collaboration is foreseen with countries facing the same challenges to promote the already existing cooperation in the area (e.g. USA and Latin American countries). In a later stage, some of these new technologies could be exported, since raw materials will eventually be limited everywhere.

Target groups

This topic is targeted to all groups in the innovation chain: fundamental research, applied research, industrial r&d. The particular subject of the proposal deals with the establishment of a strong collaboration between research entities, SMEs and large industry dealing with the recycling cycle. Consortia focusing only on fundamental research or industrial r&d are also eligible. Cooperation/joint activities between different consortia are encouraged.

3) Design of New Interfaces, Surfaces and Coatings

Technical content/scope

Europe is still keeping an outstanding position in surface and coating technology which is a key technology in a large variety of industrial production. A broad dissemination of progress in this field affects numerous sectors all over Europe. Typical technical application areas address fields such as tribology, chemical and corrosion resistance, biocompatibility, thermal barriers and (multi)functional properties such as optical, electromagnetic, (anti)-adhesive, (electro)catalytic. The objective is to develop new or significantly improved solutions and processes for surface modification in terms of structural or functional properties (including multi-functionality) by acting at the level of the materials surface. The call aims to promote more advanced use of modified surface properties and modified surface structures with improved and diverse characteristics.

The project proposals should address new solutions, consider new processing routes or new concepts for coating and surface treatment. Project proposals should also address interdisciplinary process combinations and new materials/materials combinations e.g. nanomaterials, material compounds or multilayers. Consideration should be given to fundamental understanding of the mechanisms, experimental assessment, prototyping, manufacturing and/or validation. The proposals should consider the processing aspect of the new technology aiming for flexible and energy-efficient approaches in production with a smart use of materials (saving resources and tailoring applications) in an environmentally friendly manner.

In order to ensure relevance for different partners in the value chain the proposal should state clear concepts for application(s) and sector(s). Targeted international cooperation is looked for to enforce dissemination of European industrial potential in the field worldwide (e.g. AESF/USA, Interfinish platform).

Expected impact

- (i) New and improved components/products with tailored properties or functionalities created by functional surfaces.
- (ii) Modified interface(s) which leads to a reduced use of critical materials within coatings and/or increased lifetime of products and/or more pronounced use of materials with smaller environmental footprint.
- (iii) The research activities should establish the condition for a robust and durable collaboration and dialogue between RTD performers, material producers and processors, equipment manufacturers and the industrial end users. Clear evidence of knowledge

transfer from RTD performers to industry as well as feedback routines from the industry to RTD performers should be established.

- (iv) The technology should enable a broader cross sectorial use.

Target groups

This topic is targeted to all groups in the innovation chain: fundamental research, applied research, industrial r&d. The particular subject of the proposal deals with the establishment of a strong collaboration between research entities and SMEs. Participation of large industry is encouraged e.g. as potential end user of the technology proposed. Consortia focusing only on fundamental research or industrial r&d are also eligible. Cooperation/joint activities between different consortia are encouraged.

4) Hybrid Composites

Technical content/scope

Hybrid materials and composites are combinations of two or more materials complementing each other to have super-functions or new functions which component materials do not possess. Hybrid composite structures utilizing nanotechnology enable new properties and functionalities in bulk, coating or intermediate products and englobe all the materials solutions used when a single monolithic material cannot fulfill all the requirements necessary for use in a product. Novelty in properties such as electrical, optical and mechanical properties, or light weight, can enhance the performance of devices and machines in many challenging applications for the future covering e.g. smart grids, electronics, telecommunication, security, transportation and mobility as well as heavy mechanical engineering.

The objective is to develop new material combinations with special interest in functionalization and compatibility of the interfaces.

The research proposals should address

- integrated structures which enable in-mould assembling
- designed and processed areal coatings, smart substrates which enable mechanical or electrical performance like abrasion resistance, dielectric/magnetic properties
- process technology, which reduce afterwork and/or decreases the energy demand of the manufacturing
- new material designs which allow environmentally optimized and energy efficient processes and products
- new design and dimensioning concepts for the efficient and safe use of new hybrid composites
- reduction of cycle time by automated manufacturing

Novel and unique knowledge in molecular design, functionalization and characterization of wide range of materials and their combinations should be addressed. Support for the innovation chain should be considered e.g. by molecular modelling and design from basic research to processing, manufacturing and assembly techniques and applications. International cooperation is very welcome especially related to novel matrix and filler materials of composites.

Expected impact

- (vii) More competitive industrial products with advanced materials design and manufacturing including concepts for increasing the difficulty of copying.
- (viii) Socio-ecological benefits provided by products with higher integration level of functionality, lighter products to transport, lighter vehicles to decrease energy consumption.
- (ix) Networks of the scattered players, including SME manufacturers and equipment suppliers, inside Europe improving the sharing of knowledge and reinforcing both technological and scientific platform.

Target groups

This topic is targeted to all groups in the innovation chain: fundamental research, applied research, industrial r&d. The particular subject of the proposal deals with the establishment of a strong collaboration between research entities, SMEs and large industry. Consortia focusing only on fundamental research or industrial r&d are also eligible. Cooperation/joint activities between different consortia are encouraged.

5) Materials for Energy Systems

Technical content/scope

New advanced materials are needed in developing better performing and sustainable products and processes. Such materials are a part of the solution to our industrial and societal challenges, offering better performance in their use, at lower resource and energy requirements, and improved sustainability at the end-of-life of the products. Currently over 80 % of Europe's energy use is based on oil, gas and coal. Hence, there is a growing need for new energy technologies -and more efficient and cost-competitive low carbon technologies. [The European Strategic Energy Technology Plan \(SET Plan\)](#) has developed a roadmap for materials research and innovation enabling low carbon energy technologies for the next 10 years.¹ Amongst others this roadmap underpins that advanced materials play a pivotal role in the solution, providing the means to generate and conserve energy in a more efficient and cost-competitive way.

The objective of this call is to develop new and improved material systems for the following topics:

- 1) Renewable energy sources & harvesting (for example: wind energy, photovoltaic energy, thermoelectric energy, concentrating solar power, geothermal energy, mechanical energy)
- 2) Energy storage (for example: energy electricity storage, electricity grids, chemical energy storage)
- 3) Energy efficiency (for example: improved lighting by OLEDs, novel materials for the fossil fuel energies sector, including carbon capture and storage, hydrogen and fuel cells, energy efficient construction materials, energy efficiency in transport (electromobility, lightweight, green tires, improved fuel combustion))

The research proposals should address new solutions generating materials with improved physical, chemical and mechanical properties leading to improved efficiency, reliability, lifetime, weight, cost and recyclability. The call also aims for research giving improvements in production processes and lifecycle performance and impacts. Integration of the device manufacturer who applies, produce or manufacture the material (end user) is recommended to secure the relevance of the research. A proposal should consider, demonstrate and clarify its added value and impact.

¹ http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm

These emerging technologies are also among the main drivers for use of critical raw materials - see [critical raw materials](#) for EU². Hence, in case the research proposal intends to make use of such critical raw materials the applicants are requested to present a justification for this choice. International cooperation outside M-ERA.NET is encouraged.

Expected impact

- (i) Support to meet the European strategic policy targets: 50% CO₂ reduction along the value chain; 30% reduction in primary energy use.
- (ii) Improved competitiveness and strengthened scientific base of the European academia and research institutes and the manufacturing base of the European industry in these areas.
- (iii) The research projects establish the condition for a robust and durable collaboration and dialogue between RTD performers, material producers and processors and the industrial end users. Clear evidence of knowledge transfer from RTD performers to industry as well as feedback routines from the industry to RTD performers should be established. It is also expected that the research will enable new RTD partnerships.
- (iv) The research will cover both the fundamental and the application aspects. It combines the strengths and excellence of the different countries and partners in science and technology. It helps to establish new and competitive manufacturing centres.

Target groups

This topic is targeted to all groups in the innovation chain: fundamental research, applied research, industrial r&d. The particular subject of the proposal deals with the establishment of a strong collaboration between research entities, SMEs and large industry. Consortia focusing only on fundamental research or industrial r&d are also eligible. Cooperation/joint activities between different consortia are encouraged.

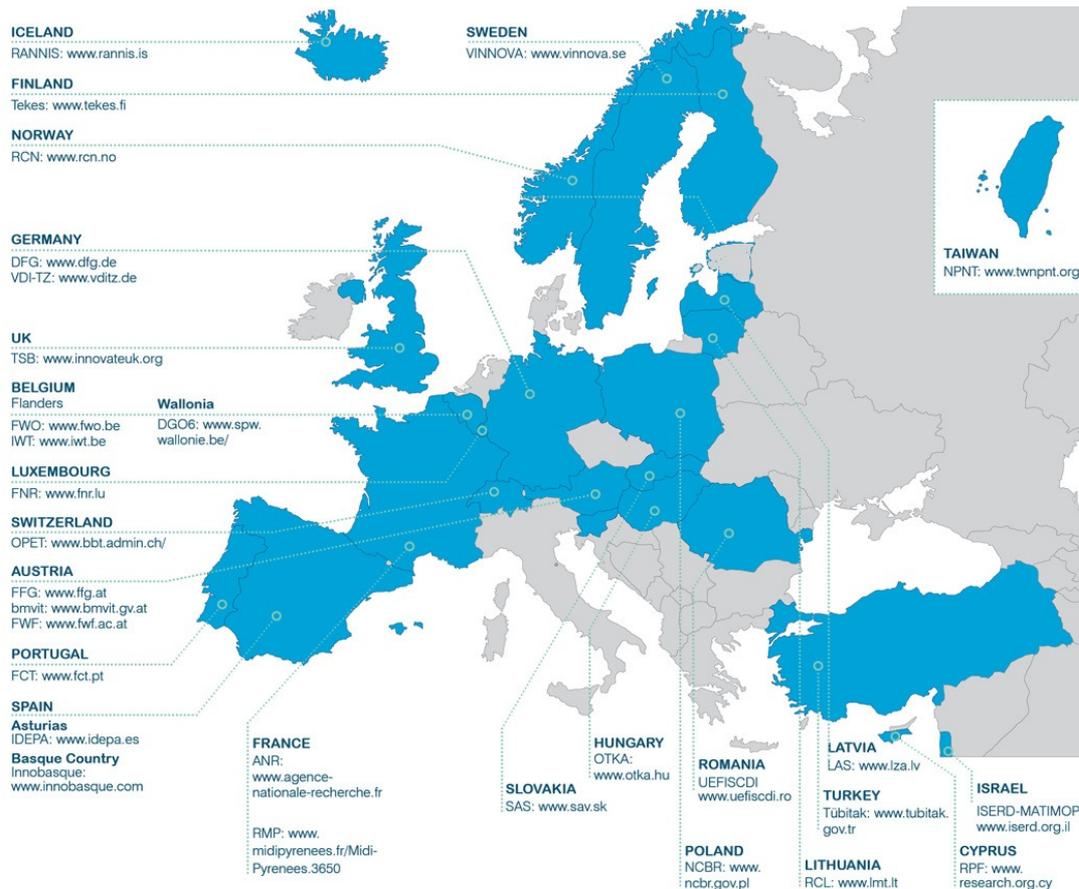
² http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm

Annex 2: Funding organizations participating in the M-ERA.NET Call 2012

Country	Funding organization involved	Contact person:
Austria	FFG Austrian Research Promotion Agency	FFG-TP: Name: Katharina GUGLER Phone: +43 57755 5081 e-mail: katharina.gugler@ffg.at
		FFG-BP: Name: Lisa BERG Phone: +43 57755 1205 e-mail: lisa.berg@ffg.at
	FWF Austrian Science Fund	Name: Kati HUTTUNEN Phone: 43 1-505 67 40-8401 e-mail: kati.huttunen@fwf.ac.at
Belgium	Flanders: FWO Research Foundation Flanders	Name: Olivier BOEHME Phone: +32 2 550 15 45 e-mail: olivier.boehme@fwo.be
	Flanders: IWT Agency for Innovation by Science and Technology	Name: Corien STRUIJK Phone: +32 2 432 42 87 e-mail: cs@iwt.be
		Name: Lieve De DONCKER Phone: +32 2 432 42 79 e-mail: ldd@iwt.be
Walloon Region: DGo6 Service public de Wallonie	Name: Nicolas DELSAUX Phone: +32 81 334520 (office) +32 473 556174 (mobile) e-mail: nicolas.delsaux@spw.wallonie.be	
Cyprus	RPF Research Promotion Foundation	Name: Leda SKOUFARI-THEMISTOU Phone: +357 22205040 e-mail: leda@research.org.cy
Finland	Tekes Finnish Funding Agency for Technology and Innovation	Name: Sisko SIPILÄ Phone: +358 50 5577845 e-mail: sisko.sipila@tekes.fi
France	ANR Agence Nationale de la Recherche	Name: Bernard BONELLO Phone: +33 1 4427 42 12 e-mail: bernard.bonello@agencerescherche.fr
	Midi-Pyrenees: RMP Region Midi-Pyrénées	Name: Stephane BEYRAND Phone: +33 5 61 39 67 02 e-mail: stephane.beyrandt@cr-mip.fr
Germany	DFG Deutsche Forschungsgemeinschaft	Name: Burkhard JAHNEN Phone: +49 (228) 885-2487 e-mail: burkhard.jahnen@dfg.de
	VDI-TZ VDI Technologiezentrum	Name: Sebastian KRUG

Country	Funding organization involved	Contact person:
		Phone: +49 (0) 2116214 -472 e-mail: krug@vdi.de
Hungary	OTKA Hungarian Scientific Research Fund	Name: Elod Nemerkenyi Phone: +36-1-219-8757 e-mail: nemerkenyi.elod@otka.hu
Iceland	RANNIS The Icelandic Centre for Research	Name: Ingolfur THORBJORNSSON Phone: +3548918795 e-mail: ingo@nmi.is
Israel	MATIMOP-ISERD Israeli Industry Center for R&D	Name: Nili MANDELBLIT Phone: +972-35118120 +972-35118122 e-mail: nili@iserd.org.il
Latvia	LAS The Latvian Academy of Sciences	Name: Maija BUNDULE Phone: +371 67227790 e-mail: maija.bundule@lza.lv
Lithuania	RCL Research Council of Lithuania	Name: Jurgita STONYTE Phone: +370 5 2618530 e-mail: jurgita.stonyte@lmt.lt
Luxembourg	FNR National Fund for Research	Name: Christiane KAELL Phone: +352 261925-34 e-mail: christiane.kaell@fnr.lu
Norway	RCN The Research Council of Norway	Name: Aase Marie HUNDERE Phone: +47 41422058; +47 22 03 73 05 e-mail: amh@forskningsradet.no amh@rcn.no
Poland	NCBiR The National Centre for Research and Development	Name: Katarzyna Samsel Phone: +48 22 39 07 156 e-mail: katarzyna.samsel@ncbr.gov.pl
Portugal	FCT Foundation for Science and Technology	Name: Dina CARRILHO Phone: +351 21 213911543 e-mail: Dina.carrilho@fct.pt
Romania	UEFISCDI Executive Agency for Higher Education, Research, Development and Innovation Funding	Name: Mircea SEGARCEANU Phone: +4-021 302 38 83 e-mail: mircea.segarceanu@uefiscdi.ro
Slovakia	SAS Slovak Academy of Sciences	Name: Jan BARANCIK Phone: +421 2 577510 137 e-mail: barancik@up.upsav.sk
Spain	Asturias: IDEPA Instituto de Desarrollo Económico del Principado de Asturias	Name: Ana Elena FERNÁNDEZ MONZÓN Phone: +34 985 98 00 20 e-mail: anae@idepa.es
		Name: Paz PALACIO Phone: +34 985 98 00 20 e-mail: paz@idepa.es
	BasqueCountry: Innobasque Basque Innovation Agency	Name: Javier LEGORBURU Phone: +34 944 20 94 88 e-mail: jlegorburu@innobasque.com

Country	Funding organization involved	Contact person:
Sweden	Vinnova Swedish Governmental Agency for Innovation System	Name: Anders MARÉN Phone: +46 8 4733188 e-mail: anders.maren@vinnova.se
Switzerland	OPET Federal Office for Professional Education and Technology	Name: Roland BÜHLER Phone: +41 31 324 71 41 e-mail: roland.buehler@bbt.admin.ch
Turkey	Tübitak The Scientific and Technological Research Council of Turkey	Name: Burcu Koc HASKILIC Phone: +904685300 e-mail: burcu.haskilic@tubitak.gov.tr
UK	TSB Technology Strategy Board	Name: John MORLIDGE Phone: +01 793442700 e-mail: john.morlidge@tsb.gov.uk
Taiwan	National Science Council & National Programme on Nano Technology	Name: Peter (Chung-Yu) WU Phone: +886-988-173-889 (mobile); +886-3-5165728 (office) e-mail: peterwu@mail.nctu.edu.tw



Map of participating countries

Commitment per funding organisation:

M-ERA.NET Call 2012		Integrated Computational Materials Engineering	Secondary Raw Materials	Design of new interfaces, surfaces & coatings	Hybrid composites	Materials for Energy Systems	Estimated Budget [MEUR]
Austria	FFG-BP	A	A	A	A	A	2**
Austria	FFG-TP	A	A	A	A	A	1
Belgium Flanders	FWO	B	B	B	B	B	0,2
Belgium Flanders	IWT	A+B	A+B	A+B	A+B	A+B	1,5
Belgium Wallonia	DGo6	A	A	A	A	A	1**
Cyprus	RPF	A				A	0,2
Finland	Tekes	A°	A°	A°	A°	A°	1,5
France	ANR	B					2
France MidiPyrenees	RMP	A	A	A	A	A	1
Germany	DFG	B					2,5
Germany	VDI-TZ		A ^{°°°}	A ^{°°°}	A ^{°°°}	A ^{°°°}	**
Hungary	OTKA	B	B	B	B	B	0,3
Iceland	RANNIS	A+B	A+B	A+B	A+B	A+B	***
Israel	MATIMOP	A°	A°	A°	A°	A°	0,5
Latvia	LAS	A+B		A+B	A+B	A+B	0,3
Lithuania	RCL					A+B ^{°°}	0,2
Luxembourg	FNR	A+B	A+B	A+B	A+B	A+B	1**
Norway	RCN	A+B	A+B	A+B	A+B	A+B	2
Poland	NCBiR	A	A	A	A	A	1,5
Portugal	FCT	A+B	A+B	A+B	A+B	A+B	0,3
Romania	UEFISCDI	A	A	A	A	A	***
Slovakia	SAS	A+B	A+B	A+B	A+B	A+B	0,3
Spain Asturias	IDEPA	A ^{°°°°}	A ^{°°°°}	A ^{°°°°}	A ^{°°°°}	A ^{°°°°}	0,5
Spain BasqueCountry	Innobasque	A	A	A	A	A	**
Sweden	Vinnova	A		A			1
Switzerland	OPET	A	A	A	A	A	1**
Taiwan	NPNT	A+B	A+B	B	A+B	B	1
Turkey	Tübitak	A°	A°	A°	A°	A°	1,5**
United Kingdom	TSB	A		A	A		1

legend:

- A applied research eligible ° only companies eligible ** flexible budget
- B basic research eligible °° only R&D institutions eligible *** budget not defined
- °°° photonic materials and/or photonic technologies only
- °°°° max. project duration 24 months

Annex 3: M-ERA.NET Full Proposal Evaluation Criteria

Evaluation Criteria, Scoring, Thresholds

- **1. Scientific and technical quality (max. 5.0 points)**
 - 1.1 Soundness of concept and quality of objectives (max. 1.5 points)
 - 1.2 Progress beyond the state-of-the-art (max. 1.5 points)
 - 1.3 Quality and effectiveness of the S & T methodology and associated work plan (max. 2.0 points)
- **2. Implementation (max. 5.0 points)**
 - 2.1 Appropriateness of the management structures and procedures (max. 1.0 points)
 - 2.2 Quality and relevant experience of the individual participants (max. 1.0 points)
 - 2.3 Quality of the consortium as a whole (including complementarity, balance) (max. 1.0 points)
 - 2.4 Appropriate allocation and justification of the resources to be committed (budget, staff, equipment) (max. 2.0 points)
- **3. Impact (max. 5.0 points)**
 - 3.1 Contribution at the European or international level to the expected impacts listed in the work programme under the relevant topic (max. 2.5 points)
 - 3.2 Appropriateness of measures for the dissemination and/or exploitation of project results and management of intellectual property (max. 2.5 points)
- **Ethical issues**

Ethical issues: Full Proposal includes FP7 “Ethical Issues Table”. In case ethical issues apply (applicants mark respective issues in the table) M-ERA.NET recommends that the national/regional organizations observe these issues (e.g. post-evaluation review) for their respective funded projects.

Additional Information

- Sub criteria have individual maximum scores with a resolution of 1 decimal point. There are no thresholds for sub criteria. The awarded scores for each sub criterion have to be justified with written statements by the evaluators.

- Each criterion will be scored between 0 and 5 representing the sum of the scoring of the individual sub criteria. The threshold for individual criteria will be 3.
- The overall threshold, applying to the sum of the individual scores will be 10.

In case of equal scoring of proposals the scores of the individual criteria and sub-criteria will be compared as follows for the elaboration of M-ERA.NET ranking list: compare scoring of criterion 1, if still equal compare scoring of criterion 2, if still equal compare scoring of criterion 3, if still equal sub-criteria are compared (1.1, 1.2,3.2)

Annex 4: Checklist for Proposers*

The proposal conforms to the call guidelines.	<input type="checkbox"/>
Every project partner has been in direct contact with his/her national or regional funding organization and has checked that their collaboration and their project contribution is eligible for funding.	<input type="checkbox"/>
All partners who are not eligible for 100% funding are able to provide financial resources for their own contribution.	<input type="checkbox"/>
The consortium is aware of the necessity to have a consortium agreement, including amongst others the agreements on intellectual property rights (IPR) and publication rules for a funded project (to be signed before the first payment)	<input type="checkbox"/>
The national/regional applications have been submitted by all consortium partners to their local funding bodies.	<input type="checkbox"/>

Please go <http://www.m-era.net/call2012> to submit the:

1. Pre-proposal form on-line.
Deadline for submission: 27 November 2012, 12:00 noon Brussels time
2. Full-Proposal form on-line.
Deadline for submission: 23 April 2013, 12:00 noon Brussels time

For further information on M-ERA.NET: please go to <http://www.m-era.net>