

Title of proposed project (preliminary) and main topic	Title to be defined.
CALL deadline for submission	ERASMUS + Programme http://ec.europa.eu/programmes/erasmus-plus/ Deadline: 2014, April 30
Action	KA2: Cooperation and Innovation for Good Practices – Strategic Partnerships in the field of education, training and youth. Topic: Innovation and exchange of best practices on the vocational training of adult learners.
Description of project idea, including theme, objectives and main activities	Needs and problems: The European industrial production is undergoing a period of severe crisis and deep change. Notably, in the last decade, the model of both mass and niche consumption has severely and quickly changed, so that all raw materials are boosting up. However, many industries in the field of composite materials are able to maintain an increasing production, by investing on research and development. Indeed, such materials allow for the use of new production technologies that may replace or integrate traditional materials such as wood, steel, aluminum, iron, etc., as they provide specific characteristics and benefits like less weight, higher resistance, reduced maintenance interventions and increased duration over time, as well as the reduction of overall environmental impact during production and the consequent disposal and reuse phases. Within the industrial sector, the definition of advanced innovative materials usually addresses to all ceramic and metal materials made of carbon fiber or to those generic polymeric materials custom-designed and produced to satisfy one or more needs. These materials differ from traditional ones not simply because they are made in recent times but because they provide a higher degree of functionalization, that is they can be designed intervening on their physical and chemical features in order to conveniently change their innate content – and thus their response to productive or functional solicitations – and improve their performances. Polymeric composite materials are light, rigid and resistant and therefore their use is particularly convenient every time a high ration between the material's mechanical properties and mass is required. In the transportation sector (planes, trains, boats, vehicles, motorcycles, etc.), such materials are largely used as they reduce the vehicles' mass providing equal performances as metals and light alloys. The same materials are also employed in several other sectors, as for example in the aerospace, defense, prosthesis and protective devices sectors, for the seismic adjustment of buildings, the construction of bridges and reticular

trusses, chemical and agroindustrial machineries and wind turbines for energy production.

Composite materials are safe and long-lasting even without maintenance. Their inner impact resistance (the capacity of controlled reaction to impact) and their flexibility (the ability to return to their original shape when the applied stress is removed) render them particularly suitable for all those structures potentially subject to impacts and impulsive stress. However, these materials demand to be only employed by qualified and highly specialized professionals. Recent market surveys show that the lack of professional profiles, which are continuously requested in this industrial supply chain, represents a great hurdle for the whole system.

Companies themselves, to avoid being left out of their global market or neglecting the increasing demands and to lower production costs by optimizing their processes, face the need to find on the labor market some specific professionals provided with all the traditional skills required by this sector (e.g. high knowledge of documents management with IT, mastery of themes related to quality processes and specific knowledge in the sector of composite materials – firstly carbon fiber). All these features, together with the young age of such professionals, can help companies take good decisions on the election of innovative machineries, suggest new ideas on production cycles and organize new models of obsolescence forecast as well as new methodologies for difficult production processes. Therefore, here is why it is necessary to establish a training and professional network aimed at training, qualifying and requalifying workers in the mentioned sector.

This training path will lead the young trainees to become greatly utilizable on the traditional labor market, as these professionals are highly requested and appreciated in the “traditional” mechanical sector but also, at the same time, they will be given specific skills to enter the sector of composites manufacture and better understand a complex model of work.

The communication among companies in this sector will be the first step toward the implementation of synergic actions (such as the supply of raw materials and the promotion of the whole production chain) and network activities, which have now become essential to face a difficult and competitive global market.

General objective:

The general objective of the project is to enlarge the knowledge of all the workers employed in the field of professional training related to composite materials, in order to improve the educational offer for direct users and thus implement:

- Technical and professional qualification of young students/graduates willing to work in the reference sector;
- Re-qualification of unemployed or unoccupied personnel having all basic requirements to access this job;
- Increase the knowledge of professionals in the field of composites.

Through the European cooperation for innovation and the exchange of good practices, the project aim is to fill this market and information gap, in a developing sector as it is this one of composite materials, starting from the needs shown by the labor market itself (companies in the supply chain). Often, especially when it underlies both practical and theoretical specialist training), the professional educational offer is not adequate, mainly in terms of numbers and dynamism, to satisfy the needs of this sector – as many times it is based on standard modules that turn out to be too theoretical or too closely related to passed production models.

On-the-job training is implemented during internships and traineeships, which sometimes puts companies in difficulty, also in terms of logistics and informative security (protection of industrial patents). An intense practical training would allow trainees to enter the company and perfect the techniques learnt, thus reducing the period of partnering in the company and rendering the whole experience more efficient.

Specific objectives:

- Sharing of vocational training experiences in the field of composite materials;
- Involvement of sector companies to share the educational requirements of workers;
- Identification of best practices to define a common European training path, with different characterizations depending on the application of composite materials;
- Support to the training needs of an expanding market, such as that of composites (high value added);
- Considering the high value added and the physical-mechanical characteristics of composite materials (low weight and high value added), involvement of individuals belonging to vulnerable groups, such as people with motor disabilities, ex-workers (unemployed, temporary workers etc.) not yet in the age of retirement.

Work programme:

- WP 1 – MANAGEMENT AND COORDINATION
- WP 2 - COMPARATIVE RESEARCH (needs of companies and state of the art of the training activities)

- WP 3 - DEVELOPMENT OF THE EXPERIMENTAL TRAINING SYSTEM (development of common models) AND INTELLECTUAL OUTPUTS (European network of excellence experts and open educational resources)
- WP 4 - TESTING
- WP 5 - MONITORING AND EVALUATION
- WP 6 - DISSEMINATION AND COMMUNICATION

Results:

- EUROPEAN TRAINING MODEL: the foreseen training activities, conceived as planning of contents and choice of educational methodologies used, will be characterized to become a good practice transferable at European level and to integrate education and future employment;
- EUROPEAN NETWORK OF TRAINING CENTERS IN THE FIELD OF COMPOSITE MATERIALS;
- FOCUS GROUPS: in addition to being an important working tool for the partnership, they will represent a result in terms of dialogue among European companies in the field of composite materials (suppliers and customers). Focus groups will aim to define the training needs to be addressed and will be a liaison for business companies in the logic of market expansion;
- ESTABLISHMENT OF A EUROPEAN NETWORK OF EXCELLENCE EXPERTS in the field of composite materials;
- OPEN EDUCATIONAL RESOURCES: educational multilingual resources that are digitised and licensed documents to be freely accessed, distributed across Europe and modifiable.

Beneficiaries:

- Young students/graduates;
- Unemployed or unoccupied people looking for a job in the field of composite materials;
- Employees in the field of composite materials;
- People affected by specific motor disabilities (hemiplegic, individuals with limited motor coordination, etc.).

Tools:

	<p>The instrument identified for the development of the project is the establishment of a network among European technical-vocational training institutions, research institutes and manufacturers active in the processing and manufacturing of composite materials with high technological and professional specialization. This network will allow the exchange of good practices at the international level, in a coordinated and collaborative way among young workers, educational institutions and the manufacturing sector in Europe.</p>
Lead Organisation	<p>IT - Forma Futuro Soc Cons. a.r.l.</p> <p>On the theme of composite materials, Forma Futuro has a five years experience, especially thanks to the collaboration with unique companies in the world such as Dallara Automobili, Turbocoating SpA and Bercella Carbon Fiber. Thanks to this cooperation, the know-how acquired by Forma Futuro provides companies in the field of automotive, transportation, defense and aerospace with a complete educational training of their staff for the entire production cycle, according to the specific requirements and needs expressed by the real market.</p>
Other Italian partners involved	<ul style="list-style-type: none"> • Dallara Automobili • Turbocoating SpA • Bercella Carbon Fiber
European Partners	European partners to be defined.
Foreseen project duration	24 months
Financial condition of participation	Maximum grant awarded: 300.000,00 €
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