



Initiative: Research for the benefit of specific groups (in particular SMEs)

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Proposal name:

Coatings for the wood from seaweeds and seeds of grapes (ECOATING)

Subject:

Nowadays, the furniture sector continues using coatings with solvent base which produce volatile organic compounds to the atmosphere detrimental for the human health as for the environment.

The purpose of ECOATING is the development of coatings for wood and derived materials based on polyurethane from renewable sources. During the execution of this project the use of seaweed and residues of grape are foreseen as renewable sources with the purpose of reducing the consumption of petroleum, a non-renewable source. The coatings must display suitable physical-chemical, rheological and mechanical characteristics so being apt for their use in the furniture industry.

PROJECT DESCRIPTION

Proposal Outline:

The main objective of the project is to develop coatings based on polyurethane from renewable sources (seaweed and seed of grape) with physical, chemical, rheological and mechanical properties suitable for its use as a product for the finishing in the furniture industry, reducing the petroleum consumption and eliminating the organic solvent use in its formulation.

As technical objectives:

- 1, To design and optimize the extraction process of essential components (polysaccharides, vegetal oils) from seaweed and seed of grape like renewable sources useful for obtaining of polyols.
- 2, To design and optimize the methodology for the synthesis of polyols from essential components coming from renewable sources and characterization of their properties.
- 3, To design and optimize the methodology for the polyurethane synthesis from obtained polyols.
- 4, To formulate coatings.
- 5, To analyze the influence of the incorporation of additives to the formulation of coatings.
- 6, To characterize the properties of coatings obtained and adjust its use as finished products in the industry of the furniture.

Actions foreseen:

1. To design and to optimize the process of extraction of essential components from renewable sources. Characterization of essential components (purity, mixes, etc.)
2. Synthesis of components for the polyurethane formulation (chemical modification, treatment of essential components) and characterization of polyols
3. Optimization of the method of polyurethane synthesis from essential components resulting from the extraction and characterization of obtained polyurethanes (physical-chemical and mechanical properties)
4. Formulation of coatings (influence of their chemical composition) and characterization of the formulations obtained (physical-chemical and mechanical properties and adjustment to the use according to effective regulations for coverings used in the sector of the furniture)

Keywords:

Wood
Furniture
Coatings

PARTNER PROFILE SOUGHT

Already existing consortium:

A research center from Spain (coordinator)
A furniture SME from Spain

Partners sought and role in the project:

SME:

SME 1: One or more companies in the area of outer furniture or urban furniture not located in Spain. Benefits: Better finishing for the furniture and less polluting for the environment. In this case the companies dedicated to the manufacture of furniture will benefit from final products for wood coverings which will provide better properties and an added value to the furniture. Since nowadays all the eco-friendly products have an added value, these companies will be able to see an increase in their volume of sales when using coverings originating from natural sources for their

SME 2: A company dedicated to the production of coverings for wood. In this case the company will be the beneficiary of the commercial exploitation of final products developed throughout the project

SME 3 : A company of intermediate products dedicated to the synthesis of polyols. This company will be beneficiary of an intermediate result that will be polyols originating from natural sources possessing the corresponding rights for exploitation.

RTD Performers:

RTD 1: University or research centre expert in extraction and characterization of essential elements from seaweed. If in addition they have experience in extraction and

characterization of essential elements from grape seed this will be an extra. (In charge of action 1).

RTD 2: University or research centre expert in the synthesis and characterization of components for the polyurethane formulation. It must have demonstrable experience in synthesis of polyols. Experience in synthesis and characterization of polyols of natural sources will be positively evaluated. (In charge of action 2).

RTD 3: University or research centre expert in synthesis and characterization of polyurethanes. (In charge of action 3).

Note: In addition, if a University or research centre could implement two actions this will be positively evaluated.

PROPOSER INFORMATION

Organisation:

CETEM, Technological Centre for Wood and Furniture, Region of Murcia

Department:

R&D

Type of Organisation:

Research Center

Country:

Spain

Contact details for interested parties:

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BUDGET AND DURATION

Between 500.000 and 1.500.000 € / 1- 2 years

DEADLINES

Deadline of the call: 3rd December

Deadline to show interest: 23rd October 2009

Note: A prompt reply of interested organizations matching the profiles sought, will be appreciated.