

## Technology Offer

# Mineral waste eco-friendly recycling technologies for building materials industry

## Summary

*A Romanian research center has developed several eco-friendly and sustainable technologies for obtaining concrete- and clay-based construction products, by recycling mineral wastes (mining sterile, ceramic wastes, fly ash). Interested partners from building industry and research areas are sought for further development in EU projects and for market scale replication of the eco-innovative resulted products.*

<b>Creation Date</b>	20 May 2015
<b>Last Update</b>	04 September 2015
<b>Expiration Date</b>	03 September 2016
<b>Reference</b>	TORO20150519003

## Details

### Description

A research institute from Romania has developed eco-friendly and sustainable technologies for obtaining concrete- and clay-based construction products, from waste materials originated from mining (sterile gangues), brick and tile industry (ceramic wastes) and from thermo electrical power plant units (fly ash) may have various utilisations. Thus, the mining sterile can be used in the composition of cement based mortars (masonry, rendering, plastering mortars and adhesives), concrete blocks and paving flags, with the main aim of replacing the raw materials content with sterile. The fly ash can be used in concrete paving flags and masonry units' compositions, with the goal of cement content reduction while the ceramic waste can be successfully recycled in ceramic masonry units' composition.

The innovative, eco building products mechanical strength and durability have been improved considerably, without any depreciation of quality.

The quality assurance system requires that any kind of waste should be tested before being used in construction materials compositions.

The research center is also an accredited testing laboratory for construction materials and products according to SR EN ISO/CEI 17025:2005 and it is also a skilful body for the technical agreements elaboration in construction, therefore it has the expertise and the equipment required to test and trial any kind of materials and construction products developed in a partnership framework.

The research center is looking for partners from building industry and research areas, in order to develop the technologies in EU projects and for market scale replication of the eco-innovative resulted products.

### Advantages and Innovations

- In concrete- and clay-based construction materials fabrication technologies, the natural raw materials can be replaced by mining and ceramic wastes.

- In concrete-based construction products fabrication technologies, the cement content is reduced by fly ash.
- The quality of the resulted eco-innovative construction products is according to the corresponding and existing standards.
- The developed technologies can be easily adapted to other types of concrete- and clay-based construction products.

The utilization of wastes for substituting raw materials and increasing sustainability is a basic requirement of the Waste Framework Directive (Directive 2008/98/EC). On the other hand, reducing the cement content has a strong environmental impact due to emissions reduction.

## Stage of Development

Available for demonstration

## IPR Status

Exclusive Rights

## Comment Regarding IPR status

The elaborated recycling technologies are not patented.

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## Keywords

### Technology

02007002	Building materials
02007003	Ceramic Materials and Powders
02007015	Properties of Materials, Corrosion/Degradation
10003004	Recycling, Recovery

### Market

09007002	Manufacture of construction materials, components and systems
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### NACE

F.41.2.0	Construction of residential and non-residential buildings
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## Network Contact

### Issuing Partner

NATIONAL INSTITUTE OF RESEARCH AND DEVELOPMENT FOR OPTOELECTRONICS

### Contact Person

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**Open for EOI :**   **Yes**

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## Client

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### Type and Size of Organisation Behind the Profile

R&D Institution

### Year Established

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### Already Engaged in Trans-National Cooperation

No.

### Languages Spoken

English

### Client Country

Romania

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## Partner Sought

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### Type and Role of Partner Sought

- Type of partners sought: building materials producers and research institutions
- Specific area of activity of the partners: building materials, construction, research
- Task to be performed by the partner sought:
- Jointly market scale replication of the developed technologies
- Partnerships and similar projects development in the European Programmes frameworks (FP7, Eurostar, Eco-Innovation)

### Type and Size of Partner Sought

SME 11-50,R&D Institution,SME <10,SME 51-250

### Type of Partnership Considered

Technical cooperation agreement