



**UNIVERSITÀ
DEGLI STUDI
DI TRIESTE**

METHOD FOR RECYCLING WASTE MATERIAL

A revolution in material recycling



Category:

Engineering

Patent Ownership:

UNIVERSITÀ DI TRIESTE

Inventors:

Marco CANIATO, Andrea TRAVAN

Priority Date:

11/03/2016

Patent Application Number:

EP16425023.5

Patent Status:

Patent Pending in Europe

Licensing Availability:

Available

Contacts:

Ufficio Trasferimento tecnologico e partecipazioni

E-mail: brevetti@amm.units.it

Tel: + 39 040 558 3821

Brief description

Traditional approach on recycling materials is based on waste reuse in order to produce other similar products. Nevertheless, if there is no possibility to remanufacture discarded materials, they will be burnt or landfilled.

The new proposed method is based on the total reuse of waste materials including the non-recyclable ones such as fiberglass, carbon fiber, building constructions waste and everything that could be reduced to powder.

The process uses only biopolymer as matrix including the grinded waste powder within its cells. A freeze-dry process transform this solution in to a new green sound and heat insulation material (100% recyclable).

Innovative aspects and main advantages

The invention relates to a composite material (open cell foam) having a high degree of porosity obtainable from waste.

The process is CO₂ balanced since the biopolymer is a neutral carbon emission material. The process uses only water which will be totally reusable in the next production cycle

since no pollutant is consumed during manufacturing process. Hence, the waste is transformed to a new life insulation product according to circular economy guidelines. It will perform for a long time and at the end of its life would be totally recyclable.

Applications

Thermal and acoustical insulating panels for naval industry (filler), automotive (filler), building (double leaf walls filler and sound absorbing external panels), Industry (filler).

Potential market

There is no limitation of potential market since thermal and acoustic insulation are needed almost everywhere. Furthermore, the need of recycling composite or ceramic materials is a paramount issue worldwide.

Development status

The material is ready and tested for almost all application. The next step concerns the scale-up of the process.

Università degli Studi di Trieste

Piazzale Europa, 1

I - 34127 Trieste

Tel. 040 558 3821

Mail: brevetti@amm.units.it

www.units.it/brevetti