

Technology Offer

Ecological filter based on zeolites for obtaining drinking water

Summary

A Romanian innovative SME has developed an ecological filter for water treatment, a device that transforms water contaminated with particulate matter and harmful elements into tap drinking water. The filter material is a zeolite material from Romania. Industrial partners interested in licensing and production are sought.

Creation Date	11 March 2015
Last Update	31 May 2015
Expiration Date	30 May 2016
Reference	TORO20140214001

Details

Description

A Romanian SME has developed an ecological filter based on zeolites for obtaining drinking water.

The volcanic tuff, the mother rock containing the mineral zeolite, has extremely reduced quantities of heavy metal impurities and other elements. This allows its use as a raw material in the process of obtaining potable water and food preparation, as well as in the pharmaceutical, cosmetics and nutritional supplements industry.

The schematic diagram of the filter is given in Figure 1.

The first layer of zeolite, which is at the bottom of the cover, close to the orifice of the inlet, retains mechanically large contaminants, such as 5 microns size of sand, silt, water impurities, etc. The water passes further through the layer of zeolite, which is responsible for reducing a large range of ions of: arsenic, lead, zinc, mercury, chlorine, of some nitrates, nitrites, ammonia, etc. The zeolite improves the taste, smell and color of water, so that it will have particular superior organoleptic qualities.

The technical problems to be solved by the invention of the innovative Romanian SME are the following:

- ensuring retention of mechanical impurities, foreign bodies, occasionally or accidentally entered the water network and which clearly affect the quality of water. The water flow can be maintained between the desired limits, the filtration taking place perfectly, without barriers or occlusions.
- retention of harmful elements. The zeolites have a higher capacity retention of health harming components such as excesses of calcium, magnesium, sodium, potassium, up to mercury, zinc and radioactive elements. The voids and structural pores of zeolites can retain nitrates, nitrites, ammonia, small molecules with significant adverse effects on living organisms.

The innovative SME is looking for an industrial partner interested in licensing and manufacturing the filter based on zeolites, offering at the same time technical assistance (providing the

technological know-how in order for the industrial partner to produce the ecological filter).

Advantages and Innovations

The zeolite filters:

- are cheap, reliable and environmental-friendly;
- have superior stability and operating time longer than the currently used filters based on clay, charcoal, etc.
- no harmful for living organisms.

Stage of Development

Prototype available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

The patent has been applied for at the Romanian State Office for Trademarks and Inventions.

Keywords

Technology

10001006	Protection against intoxication
10004004	Drinking Water

Market

05007007	Other medical/health related (not elsewhere classified)
07004008	Other consumer products

NACE

B.08.9.1	Mining of chemical and fertiliser minerals
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Network Contact

Issuing Partner

NATIONAL INSTITUTE OF RESEARCH AND DEVELOPMENT FOR OPTOELECTRONICS

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Open for EOI : **Yes**

Dissemination

Send to Sector Group
Healthcare

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

0

Turnover

<1M

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English

Client Country

Romania

Partner Sought

Type and Role of Partner Sought

Partner type: industrial partner interested in licensing and manufacturing the filter based on zeolites.

Specific area of the partner: health or environment sector.

Task to be performed by the partner sought: production of the filter based on zeolites, under license agreement, with technical assistance.

Type and Size of Partner Sought

SME 11-50

Type of Partnership Considered

License agreement

Manufacturing agreement
