

Partnering Opportunity

Profile status : Archived

Technology Offer

Fast method for determination of metal concentration in water.

Summary

A Romanian research institute, specialized in the research and development of new methods in the analytical chemistry field, has developed a timesaving method for metals determination in water, with useful applications in the water treatment field. Currently, the method is under development/ lab testing. The institute is looking for partners such as environmental and chemical SMEs and large companies to conclude commercial agreements with technical assistance.

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Details

Description

A Romanian national research institute is specialized in the application of analytical chemistry in three main directions: Environment and Health, Instrumental Analytical Chemistry, Bioenergy and Biofuels. The institute has a remarkable endowment that allows approaching projects from research to stage prototype realization and technology transfer.

The heavy metals contamination in water is one of the major pollution problems. The slow assimilation of these substances affects people's health, producing chronic changes in the physiological systems. In drinking water, heavy metals can go through household facilities, and their presence in high concentrations can seriously harm

health. Some heavy metals are indispensable for a living, but in high concentrations, they can become toxic (eg. copper, zinc, manganese, iron). Other heavy metals like cadmium, mercury, lead, and chromium are toxic regardless of the quantity. The most common heavy metals that affect the health of the human body are lead, mercury, cadmium, arsenic, and iron. Therefore, monitoring the quality of water is essential as it is constantly used by the population.

Thus, the Romanian research institute has developed a method for metal concentration determination in water that is fast and exhaustive, offering information about most of the chemical composition of a sample. This approach saves time and reagents, while still allowing a complete characterization, from the elemental concentration standpoint. The method can be used by commercial laboratories or research facilities to assess a sample before deciding the next step in the analysis workflow, or to characterize an unknown sample and provide insights into its nature.

The Romanian research institute is looking for partners abroad such as environmental and chemical SMEs or large companies, under commercial agreements with technical assistance (engineering and technical assistance) in the use of appropriate equipment and/or its purchase as well as with the know-how transfer of the method and staff training.

Advantages and innovations

The developed method advantages include:

- Low reagents usage, no need for single or multi-element standards containing every element needed to be determined;
- Short analysis time (usually less than 3 minutes per sample);
- Over 65 elements determined in a single run;
- Low detection limit (less than one part per billion level for most of the elements);
- Several orders of magnitude concentration range (no need for sample dilution).

Regarding its innovative character, the method offers:

- Tuning the detector calibration routines to fit the needs of water samples analysis;
- Obtaining an updated response factor by using an appropriate multi-element calibration standard solution.

Stage of development

Under development/lab tested

Comments Regarding Stage of Development

The method is in final testing stage, estimating that a demonstration phase will be reached by September 2018.

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

The application to Romanian State Office for Inventions and Trademarks is pending.

Profile Origin

COSME

Keywords

Technology

05001001

Analytical Chemistry

05001003

Inorganic Chemistry

Market

08004003

Water treatment equipment and waste disposal systems

NACE

M.72.1.9

Other research and experimental development on natural sciences and engin

Network Contact

Issuing Partner

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Open for EOI: **No**

Dissemination

Relevant sector groups

Environment

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

1992

Turnover

<1M

Already Engaged in Trans-National Cooperation

Yes

Certifications Standards

ISO 9000:2008

ISO 17025:1999

Languages Spoken

Romanian

English

Client Country

Romania

Experience

ISO 90001:2008 SR EN ISO/CEI 17025:2005

Partner Sought

Type and Role of Partner Sought

Type of partner sought: SMEs and large companies active in the environmental and chemical field. Under the commercial agreement with technical assistance, the sought partners should implement the method for metal concentration determination in water, using appropriate types of equipment and qualified personnel. The Romanian Institute will support the partner with technical consultancy regarding the use of appropriate equipment, as well as with the know-how transfer of the method and staff training.

Type and Size of Partner Sought

SME 11-50, SME <10,>500 MNE, 251-500, SME 51-250,>500

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments
