Integrated software for water quality assessment

Summary

A research center of a Walloon University has developed a decision support model for quality management of the aquatic environment. Provided with Graphical User Interface, the model takes into account the anthropogenic loads and their impacts on the physicochemical quality of the modelled river system. The model is in use by water management stakeholders. The team is looking for academic, industrial or public partnerships for research, license or collaboration agreements in the field of water.

Expiration Date	07 February 2018
Reference	TOBE20161221001
Profile link	

Details

Description

The numerical model, developed in Wallonia (Belgium), is a powerful tool for a holistic water management by assisting in the establishment of pressure / impact relationships. The model involves a wide range of features in its integrated software suite. It handles a wide variety of input data at the watershed scale up to the entire international hydrographic district. Natural system processes and anthropogenic impact pressures (urban, industrial, WWTP-WasteWater Treatment Plants-, livestock discharges, and processes, …) are taken into account in order to assess physicochemical quality of the water bodies. That allows decision makers in the water sector to provide measures (management plan) for water quality enhancement (before their implementation). In that way, the model is dedicated to implement the WFD (Water Framework Directive 2000/60/CE).
The tool is made available to the market via license agreement. Types of partners sought are water management decision makers and environmental consciousness companies regarding their industrial discharges. Players involved in environmental scientific research are also sought by the development team, in order to establish research cooperation agreements related to water quality assessment.

Advantages and Innovations

The Belgian research team offers a deterministic and physically based modelling tool that provides a better understanding of the hydro system processes. The innovation is generated through an acknowledged experience (30 years) in the development of technologically advanced software suite helping in integrated water quality forecasting and management. It is a powerful deterministic and non-stationary quality processing engine taking into account various parameters as the anthropogenic impact, corbicula, segmentation and suspended matter, transport of micropollutants, … The modelling processes that reckon physical, chemical and biological factors requires big amount of input data assimilated by dedicated sophisticated numerical algorithms and tools. It also provides an overall water quality assessment in a single software suite. Through a better understanding of the described basin, it also allows to reinforce the monitoring Network as well as the waste water treatment strategies.

Stage of Development

Available for demonstration

IPR Status

Copyright

Profile Origin

National or Regional R&D programme

Keywords

Technology

01003006	Computer Software
01004006	Environment Management Systems
10002011	Soil and Groundwater Pollution
10004008	Water Resources Management
10004010	Hydrology

Market

01005001	Satellite services/carriers/operators
02007015	Integrated software
09008002	Water, sewerage, chemical and solid waste treatment plants

NACE

E.36.0.0	Water collection, treatment and supply
M.74.9.0	Other professional, scientific and technical activities n.e.c.
P.85.4.2	Tertiary education

Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
French

Client Country

Belgium

Partner Sought

Type and Role of Partner Sought

- License agreement:
To implement the product into Public Administrations, Ministries, Agencies and Industries in order to provide the expertise and technical support as required by the European Commission (WFD) in the scope of water quality management

- Collaboration agreement:
Partnerships with Public Administrations, Agencies and Industries to set up actions in financed projects, in the field of water management (management plans, purification, good status management, environmental protection, sustainable development projects, …)

- Research & Development (R&D) projects and scientific exchanges:
Academic institutions and research organizations partnerships providing whether bilateral scientific mobility (students, PhD students and professors), internships, PhD thesis supervision, or joint expertise in R&D projects

Type of Partnership Considered

License agreement
Technical cooperation agreement
Research cooperation agreement

Technology Request

Seeking partner to provide sensor components for small scale anaerobic digestion technology

Summary

A Scottish (UK) SME in the waste-to-energy sector is seeking technology partners to support the development of an ultra small scale anaerobic digestion technology for on-site food waste treatment. The company is interested in commercial, research and technical partnerships to support development of the prototype into a commercial product. Specifically, the company seeks industrial, academic or research organisations that are producing sensors that can be used in the anaerobic digestion process.

Expiration Date 30 January 2018
Reference TRUK20170126001
Profile link

Details

Description

A UK SME in the waste-to-energy sector is developing an ultra-small scale anaerobic digester for immediate treatment of food waste within the restaurant premises (on-site). By converting waste where it is generated, the technology eliminates the need for storage and transportation of food waste to an anaerobic digestion center. This will enable the complete capture of the total energy content in food waste, of which up to 70% is currently lost in transit.

The product is at technology readiness level 4 (TRL 4) having completed the basic and technology feasibility study. The company is currently developing the prototype for testing in a real/relevant environment such as a restaurant.

The company needs a partner to produce micro-sensors that are resilient enough to withstand the anaerobic digestion process. These sensors will be integrated into the prototype as a component part.

The company is interested in the following types of partnership:

- Commercial agreement with technical assistance: to support the engineering and construction of the required sensor-components

- Research/ Technical cooperation agreement: to contribute to the development of the required sensor-components

Technical Specification or Expertise Sought

The partner should be able to produce micro sensors that are resilient enough to withstand the harsh environment of the anaerobic digestion process for a minimum of 5 years.

The partner should be able to supply specific components for the development of the prototype, including;
1. Automated gas monitoring of atmospheric concentration to ascertain the following levels; <19.5% by volume of oxygen, > 5% by volume of Methane, > 100 ppm of Hydrogen Sulphide, 300 ppm of Ammonia and 40,000 ppm of Carbon dioxide.
2. Automated sensors to determine concentration of basic feed and digester characteristics such as; Volatile fatty acid, ammonia, carbohydrate, protein and lipid.

The ability to effectively apply the result generated from the sensor by a programmable Logic controller will be critical.

Stage of Development

Under development/lab tested

Keywords

Technology

04002010	Combined heat and power (CHP) engines
04002011	Micro-generation and grid connection
04005006	Solid biomass
04005012	Waste to energy - other
04006	Biogas and anaerobic digestion (AD)

Market

02003	Specialised Turnkey Systems
03007002	Other measuring devices
03007003	Other analytical and scientific instrumentation
06003009	Biomass and Biofuels
06003010	Distributed power and grid connection

NACE

E.38	Waste collection, treatment and disposal activities; materials recovery
E.38.2	Waste treatment and disposal
E.38.2.1	Treatment and disposal of non-hazardous waste
E.39	Remediation activities and other waste management services

Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English

Client Country

United Kingdom

Partner Sought

Type and Role of Partner Sought

The SME is seeking industrial, academic or research organisations currently operating in the waste to energy sector producing sensors used in the anaerobic digestion process.

The partner should have the ability to produce micro-sensor components for the prototype that are resilient enough to withstand the anaerobic digestion process for at least 5 years.

The desired outcome of a partnership will be to supply specific components for the development of the prototype as detailed in the Technical specifications.

The company is interested in the following types of partnership:

- Commercial agreement with technical assistance: to support the engineering and construction of the required sensor-components

- Research/ Technical cooperation agreement: to contribute to the development of the required sensor-components

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement
Research cooperation agreement