

 Zawartość zarchiwizowana w dniu 2024-05-15



Metal waste prevention

Wyniki w skrócie

Improvements in analytical methods of analysis

With regulations on the quality of wastewater tightening, it is becoming increasingly necessary to develop new technologies to assess water quality.



© PhotoDisc

Isotachophoresis, ITP, is a technique, which is particularly efficient in analyses of trace components, often in complex matrices, such as wastewaters. This is primarily attributed to the fact that on-line sample concentration may be performed. In addition, where specialised equipment designed for ITP analyses is utilised, concentration, removal and subsequent quantification of individual component zones in a complex mixture can be carried out in one run. This specialised

equipment also allows for increased sample loadings.

ITP is performed using a discontinuous buffer system comprised of a lead electrolyte (LE) and a terminating electrolyte (TE). The LE is selected so as to contain ions of higher mobility than the analyte ions of interest, and the TE ions with lower mobility. Sample is introduced as a plug sandwiched between the LE and TE, and upon application of a potential across the capillary, the analyte components separate into discrete bands.

The development of an ITP sensor platform was undertaken using silicon micromachining, electroplating, injection mould processing, metallisation and gluing. The sensor consists of a polycarbonate channel plate and cover lid which is metallised. The two components are bonded together. Using an isotropic plasma etching process, three different channel geometries were etched into silicon and the silicon surface was transferred to a nickel injection-moulding tool. The channel precision was then transferred to the plastic channel plate. The detection electrodes were developed using a sputtering process for good adhesion starting layers followed by electroplating to increase their thickness. The sensor set-up system is being established with a high power supply and control interface, and evaluation software.

The sensor is currently at the development stage. Potential areas of use are in water analysis and also in other industries where quality analysis is required such as the chemical, pharmaceutical and food industries.

Znajdź inne artykuły w tej samej dziedzinie zastosowania



Catching up with URBAN GreenUP: Embracing nature-based solutions to tackle cities' climate change challenges

9 Września 2024



Smoothing the path to net-zero emissions

3 Października 2023





Lessons in managing the risk of floods and droughts

20 Września 2022



How jellyfish could help us clean up the ocean

18 Marca 2022



Informacje na temat projektu

MEWAPREV

Identyfikator umowy o grant: G1RD-CT-2000-00408

Projekt został zamknięty

Data rozpoczęcia

1 Stycznia 2001

Data zakończenia

31 Grudnia 2003

Finansowanie w ramach

Programme for research technological development and demonstration on "Competitive and sustainable growth 1998-2002"

Koszt całkowity

€ 4 874 892,00

Wkład UE

€ 2 884 933,00

Koordynowany przez

KATHOLIEKE HOGESCHOOL
SINT-LIEVEN



Belgium

Ostatnia aktualizacja: 9 Maja 2006

Permalink: <https://cordis.europa.eu/article/id/82548-improvements-in-analytical-methods-of-analysis>

European Union, 2025

