

Accepted Manuscript

Title: Evaluation of a novel PVC-based efficient potentiometric sensor containing a tripodal diglycolamide (TREN-DGA) ionophore for europium(III) estimation

Authors: Bholanath Mahanty, Ashis K. Satpati, S. Kumar, Andrea Leoncini, Jurriaan Huskens, Willem Verboom, Prasanta K. Mohapatra



PII: S0925-4005(18)31067-0
DOI: <https://doi.org/10.1016/j.snb.2018.05.159>
Reference: SNB 24815

To appear in: *Sensors and Actuators B*

Received date: 11-1-2018
Revised date: 17-5-2018
Accepted date: 27-5-2018

Please cite this article as: Bholanath Mahanty, Ashis K.Satpati, S.Kumar, Andrea Leoncini, Jurriaan Huskens, Willem Verboom, Prasanta K.Mohapatra, Evaluation of a novel PVC-based efficient potentiometric sensor containing a tripodal diglycolamide (TREN-DGA) ionophore for europium(III) estimation, *Sensors and Actuators B: Chemical* <https://doi.org/10.1016/j.snb.2018.05.159>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Evaluation of a novel PVC-based efficient potentiometric sensor containing a tripodal diglycolamide (TREN-DGA) ionophore for europium(III) estimation

Bholanath Mahanty,¹ Ashis K. Satpati,^{2*} S. Kumar², Andrea Leoncini,³ Jurriaan Huskens,³ Willem Verboom,³ Prasanta K. Mohapatra^{1*}

¹Radiochemistry Division, Bhabha Atomic Research Centre, Trombay, Mumbai – 400085, India

²Analytical chemistry Division, Bhabha Atomic Research Centre, Trombay, Mumbai – 400085, India

³ Laboratory of Molecular Nanofabrication, MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands

*Corresponding authors' email: mpatra@barc.gov.in (PKM), asatpati@barc.gov.in (AKS)

HIGHLIGHTS

- TREN-DGA ligand containing PVC membranes were developed
- The polymeric membranes were characterized using conventional techniques
- The polymeric membranes were used for Eu³⁺ ion sensing from dilute acid feeds
- The stability and interference studies were highly encouraging
- The TREN-DGA based sensor was found to be much superior to the TODGA based sensor

Abstract

Polymeric membrane-based electrodes containing a multiple diglycolamide (DGA), such as a N-pivot diglycolamide (diglycolamide-TREN (DGA-TREN) and a C-pivot diglycolamide (tripodal diglycolamide) (T-DGA) as ionophore, and polyvinyl chloride (PVC) as the base polymer were fabricated. These membranes were tested for the potentiometric determination of europium ions in acidic feed solutions. The membrane with a composition of 81.5% PVC and

Download English Version:

<https://daneshyari.com/en/article/7138963>

Download Persian Version:

<https://daneshyari.com/article/7138963>

[Daneshyari.com](https://daneshyari.com)