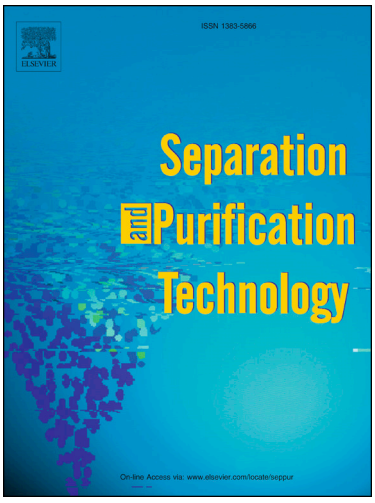
Accepted Manuscript



The recovery and selective extraction of gold and platinum by novel ionic liquids

Stéphanie Boudesocque, Aminou Mohamadou, Alexandra Conreux, Béatrice Marin, Laurent Dupont

PII: S1383-5866(18)32566-8
DOI: https://doi.org/10.1016/j.seppur.2018.09.002
Reference: SEPPUR 14900

To appear in: *Separation and Purification Technology*

Received Date: 25 July 2018
Revised Date: 31 August 2018
Accepted Date: 2 September 2018

Please cite this article as: S. Boudesocque, A. Mohamadou, A. Conreux, B. Marin, L. Dupont, The recovery and selective extraction of gold and platinum by novel ionic liquids, *Separation and Purification Technology* (2018), doi: https://doi.org/10.1016/j.seppur.2018.09.002

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.

ACCEPTED MANUSCRIPT

The recovery and selective extraction of gold and platinum by novel ionic liquids

Stéphanie BOUDESOCQUE[a], Aminou MOHAMADOU[a], Alexandra CONREUX[b] , Béatrice MARIN[b] and Laurent DUPONT[a]*

[a]Université de Reims Champagne-Ardenne, Institut de Chimie Moléculaire de Reims (ICMR), CNRS UMR 7312, UFR des Sciences Exactes et Naturelles, Bâtiment 18 Europol'Agro, BP 1039, F-51687 Reims Cedex 2, France.

[b]Université de Reims Champagne-Ardenne, Université Reims Champagne Ardenne GEGENAA EA 3795, Centre de Recherche en Environnement et Agronomie, BP 1039, F-51687 Reims Cedex 2, France.

Abstract

Ionic liquids bearing tetrahexylammonium and tetraoctylammonium cations and halide (Br^-), dicyanamide (Dca^-), thiocyanato (SCN^-) and bis(trifluoromethysulfonyl)imide (Tf_2N^-) by liquid-liquid extraction were studied on Au(III), Pt(II) and Pt(IV) extraction. All the system show excellent extractability of Au(III). It is the same for Pt(II) and Pt(IV) except for Tf_2N^- based ionic liquids which do not extract Pt(II) and Pt(IV) and constitute selective system for the separation of Au and Pt from aqueous effluents. The influence of acid concentration on extraction yield is evaluated. The anion-exchange mechanism of Au(III), Pt(II) and Pt(IV) was confirmed. Reductive stripping was used for the recovery of Au(III) and Pt(IV). Tf_2N^- based ionic liquids show an excellent recovery of Au(III) using thiourea as back-extractant.

Keywords: Ionic Liquids, gold , platinum, liquid-liquid extraction

(*) Corresponding author. Address: ICMR (Institut de Chimie Moléculaire de Reims), Université de Reims Champagne-Ardenne, BP1039, 51687 Reims Cedex 2, France. Tel.: +33 (0) 3 26 91 33 36; fax: +33 (0) 3 26 91 32 43. E-mail address: laurent.dupont@univ-reims.fr (L. DUPONT).

Download English Version:

https://daneshyari.com/en/article/11003315

Download Persian Version:

https://daneshyari.com/article/11003315

Daneshyari.com