

Separation and Determination of Autocatalyst-Derived Platinum, Palladium, and Rhodium in the Environment

メタデータ	言語: jpn 出版者: 公開日: 2022-05-19 キーワード (Ja): キーワード (En): 作成者: Honjo, Takaharu メールアドレス: 所属:
URL	https://doi.org/10.24517/00057077

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 International License.



2004 Fiscal Year Final Research Report Summary

Separation and Determination of Autocatalyst-Derived Platinum, Palladium, and Rhodium in the Environment

Research Project

Project/Area Number

15550064

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Analytical chemistry

Research Institution

Kanazawa University

Principal Investigator

HONJO Takaharu Kanazawa University, Graduate School of Natural Science & Technology, Professor, 自然科学研究科, 教授 (90019498)

Project Period (FY)

2003 – 2004

Keywords

Autocatalyst / Platinum / Palladium / Rhodium / Environment / Separation / Determination

Research Abstract

Since automobiles equipped with three-way (i.e. removing carbon monoxide, nitrogen oxides, and hydrocarbons together in exhaust gasses) catalysts run under strict conditions as 400-1000 °C, platinum, palladium, and rhodium are released by catalytic degradation, causing an environmental pollution. Then, the emissions of these precious metals in soot from the exhaust pipes and mufflers of 4 types of gasoline powered cars, were investigated first and ascertained that the values were Pt : 11-32 ppm, Pd : 7-19 ppm, and Rh : 3-25 ppm, respectively. The content of these precious metals tends to increase with increasing the running distance (50,000-130,000 km) of cars in roads, and also with drawing to the three-way catalytic converter in exhaust pipes.

In soot samples, Pd and Rh were detected in M IRA (DAIHATSU), while Pt and Rh were detected in FAMILIA (MAZDA), SUNNY (NISSAN), and SKYLINE (NISSAN), respectively. Inorganic ingredient (10.7-5,440 ppm) detected except for precious metals in soot ...▼ More

Research Products (7 results)

All	2002	2001	2000
All	Journal Article (7 results)		

[Journal Article] Separation of Precious Metals with Crown Ethers as Their Ion-pair Complexes by Means of Solvent Extraction	2002 ▼
[Journal Article] Extraction Behaviour of Platinum(IV) in Chloroform with a Crown Ether from Acid Media	2001 ▼
[Journal Article] Extraction Behaviour of Platinum(II) in Chloroform with a Crown Ether from Acidic Media	2001 ▼
[Journal Article] Separation of trace amounts of palladium(II) with crown ether from hydrochloric acid and potassium thiocyanate media	2000 ▼
[Journal Article] Separation of trace amounts of rhodium(III) with tri-n-butyl phosphate from nitric acid and sodium trichloroacetate media	2000 ▼
[Journal Article] Separation of trace amounts of palladium(II) with crown ether from hydrochloric acid and potassium thiocyanate media	2000 ▼
[Journal Article] Separation of trace amounts of rhodium (III) with tri-n-butyl phosphate from nitric acid and sodium trichloroacetate media	2000 ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-15550064/155500642004kenkyu_seika_hokoku_

Published: 2006-07-10