Recovery Of Platinum From Chloride Leaching Solution Of

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Precipitating Platinum Using Potassium Chloride Platinum Recovery from Laboratory Chemical Waste (Pt 2) Platinum Recovery From Computer Scrap HDD Platters How to precipitate palladium and platinum from aqua regia solution. *Precipitating Platinum* **Exploring the Chemistry of Platinum**

Platinum Recovery from Laboratory Chemical Waste (pt 1)**Catalytic converter - Platinum recovery - full proces!!! Recovering Platinum-Group Metals in Catalytic Converters Refining Platinum Scrap Palladium ammonium chloride. Separate palladium from rhodium.** *Precious Metal Refining \u0026 Recovery, Episode 13: Platinum From Spark Plugs* Platinum extraction from a Catalytic Converter. Platinum recovery from Hdd plates part 1 [RRCats.com] - Pricing Your Scrap Catalytic Converters Catalytic Converter Platinum/Palladium Recovery, Part 1 Palladium - THE NASTIEST METAL ON EARTH! Hard Drive Tear Down For Precious Metals! In Detail HD Paladium and Silver recovery \u0026 refining from MLCC part 1 *How I sort Gold, Palladium, Silver and Precious Metals after depopulating circuit boards*

Drop copper from solutions with aluminium!

How To Recover Gold From Computer Scrap with Household ChemicalsPlatinum Recovery From Automotive Catalytic Converters Part 1of2 Platinum Group Metal Recovery from Spent Catalytic Converters Using meltet sodium hydroxide. How To Recover Gold and Platinum From Filter Papers *Catalytic converter Pt recovery with bleach and Hcl!* How to Refine and Melt Platinum - Tutorial part 1 *Separate gold from palladium and platinum solution using sodium bisulfite as reducer. How to Refine and Melt Platinum - Tutorial part 2* **Precipitating Platinum Palladium Refining** Recovery Of Platinum From Chloride

Platinum Lake Technology Inc., Canada (Ryder and Dymock, 1990) developed a hydrometallurgical process for the recovery of precious metals from spent automotive catalysts following acid leaching in chloride medium. The small-scale process with 95% Pt and 98% Pd recovery was used for commercial applications.

Hydrometallurgical recovery/recycling of platinum by the ...

The liquid-liquid extraction of platinum(IV) and palladium(II) from hydrochloric acid media was carried out using N,N'-dimethyl-N,N'-dicyclohexylthiodiglycolamide (DMDCHTDGA) in 1,2-dichloroethane (1,2-DCE). Pt(IV) is efficiently extracted from 5 M HCl onwards (%E ? 97%), whereas Pd(II) is quantitatively recovered from 1 to 8 M HCl solutions.

Recovery of Platinum and Palladium from Chloride Solutions ...

S. Aktas and M.H. Morcali, "Platinum recovery from dilute platinum solutions using activated carbon," Transactions of Nonferrous Metals Society of China, 21 (2011a), 2554–2558. CrossRef Google Scholar

Recovery of Platinum from Dilute Chloride Media Using ...

Abstract The investigation is devoted to sorption recovery of platinum (II, IV) from chloride solutions, freshly prepared and kept over 3months, on commercial anion exchangers with different...

Ion exchange recovery of platinum from chloride solutions ...

Effective Dissolution of Platinum by Using Chloride Salts in Recovery Process Abstract. Platinum (Pt) is typically recovered by employing dissolution processes in aqueous solutions; however, these... Introduction. P latinum (Pt) is characterized by high heat resistance, high corrosion resistance, ...

Effective Dissolution of Platinum by Using Chloride Salts ...

Recovery Of Platinum From Chloride Leaching Solution Of Recognizing the artifice ways to get this books recovery of platinum from chloride leaching solution of is additionally useful. You have remained in right site to begin getting this info. get the recovery of platinum from chloride leaching solution of member that we have enough money here and check out the link.

Recovery Of Platinum From Chloride Leaching Solution Of

The ionic state of platinum in chloride solutions depends on medium acidity, concentration of chloride ions and temperature. Hexachloroplatinate ions (PtCl 6 2?) predominate in strong acidic solutions (HCl ? 3 mol L ?1). Under reduction of the free acidity (increase in pH value) aquation and hydrolysis take place.

Recovery of platinum, tin and indium from spent catalysts ...

Precipitating Platinum ammonium chloride from Aqua Regia Solution. The source of the Platinum was 16.7 grams of 90/10 Pt/Ir thermocouples. The alloy took 7 h...

Precipitating Platinum - YouTube

Platinum 2012 731 After the sodium chloride pre-treatment, the bed was again washed with an excess amount of water over a 2-hour period to remove excess sodium chloride solution from the bed. In the case when weak-base and chelating resins were used, the resin was washed with 5 bed-

THE RECOVERY OF PLATINUM, PALLADIUM, AND GOLD FROM A ...

The solution is reduced by adding ferrous chloride to remove the gold. The addition of ammonium chloride to the filtrate precipitates impure ammonium chloroplatinate, which is calcined to a crude platinum sponge, redissolved, reprecipitated as pure ammonium chloroplatinate and calcined again to give pure platinum sponge.

Extraction and Refining of the Platinum Metals | Johnson ...

recovery of platinum from chloride leaching solution of is available in our digital library an online access to it is set as public so you can download it instantly. Our digital library hosts in multiple countries, allowing you to get the most less latency time to download any of our books like this one. Kindly say, the recovery of platinum ...

Recovery Of Platinum From Chloride Leaching Solution Of

The recovery of PGM from products of processing of secondary raw materials occurs often by means of sulfuric acid and sulfate solutions. In these solutions, platinum and rhodium exist in the form of sulfate complexes, which are more kinetically inert, compared to corresponding chloride complexes, especially of rhodium [1,3].

Kinetics of Simultaneous Recovery of Platinum (II,IV) and ...

to simultaneously recover three different platinum group elements (PGE), platinum(IV), palladium(II) and rhodium(III), present in a chloride solution produced by the leaching of spent automotive catalysts. The tested ion exchangers included a resin with a quaternary

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Recovery of platinum from a selective linear paraffin dehydrogenation spent catalyst is reported using cyanide leaching method followed by adsorption of the cyanide platinum complex onto an ...

Recovery of Platinum from Chloride Leaching Solution of ...

After leaching process at optimum conditions, platinum was firstly precipitated in the form of (NH4)2PtCl6 (ammonium chloroplatinate) by adding (5ml/l) of ammonium chloride (NH4Cl) as a precipitant agent .Then, palladium was precipitated in the form of (NH4)2PdClO3 (palladium ammonium chlorate) by adding (5g/l) of sodium chlorate (NaClO3) as a precipitant agent to the remaining solution after ...

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platinum recovery from dilute acidic aqueous solutions. This method might be used to reduce metal losses in commonly applied technologies of precious metal re?ning and separation. Experimental In all our experiments, commercially available AC (AC) purchased from Norit(ROX 0.8) was applied in non-modi?ed form. The platinum(IV) chloride

Kinetic studies of the removal of Pt(IV) chloride complex ...

Abstract. The objective of this study was to investigate the applicability and performance of the selected ion exchangers with different physicochemical characteristics and functional groups to simultaneously recover three different platinum group elements (PGE), platinum(IV), palladium(II) and rhodium(III), present in a chloride solution produced by the leaching of spent automotive catalysts.

Recovery of platinum, palladium and rhodium from acidic ...

Recovery of high purity Pt, Pd, and Rh is achieved by the proposed recycling process. The results demonstrate that separation using phosphonium-based ILs is useful for recycling PGMs. AB - Platinum group metals (PGMs) play an important role in the automotive industry as key components of exhaust catalysts.

The Bureau of Mines devised a procedure for selectively extracting platinum-group metals (PGM) and gold from Stillwater Complex flotation concentrate. The Stillwater Complex is the only major U.S. PGM resource. Development of a suitable extraction technique will contribute to its exploitation. The concentrate was roasted at 1,050° C to convert host base-metal sulfides to oxides and the PGM from sulfide minerals to their elemental states. The roasted concentrate was preleached with dilute sulfuric acid to remove easily soluble gangue minerals. After pre-leaching, the concentrate was slurried with 6M HCl and leached at ambient temperature and pressure with a strong-oxidizing agent. Hydrogen peroxide, chlorine, sodium hypochlorite, nitric acid, and a persulfate salt were the oxidants investigated. The two-stage leaching scheme ex-tracted up to 97 pct of the platinum, 92 pct of the palladium, and 99 pct of the gold from the roasted concentrate. The base metals were not solubilized and reported to the residue. No attempt was made to devise a procedure to recover the copper and nickel because they comprise less than 5 pct of the value of the concentrate. Viable techniques for recovering the precious metals from the pregnant solution were sulfide precipitation, cementation with nickel, or adsorption on activated carbon.

The voltammetric characteristics of Pt(II) and Pt(IV) have been examined at a vitreous carbon electrode in slightly acidic 3M (approx. 15 wt %) NaCl solutions. Pt(IV) is reduced to Pt(II) at approx. 0 V and Pt(II) is reduced to Pt(0) at approx.-0.5 V vs Ag-AgCl. The rate of deposition of platinum metal at -0.5 V is very low on bare carbon, but increases as the coverage of platinum increases. The potential at which hydrogen is evolved in this medium is approx.-0.85 V.A technique has been tested for the removal of sub-part-per-million levels of platinum from the high-salinity brine by controlled-potential electrolysis using a reticulated, vitreous-carbon, flow-through electrode. However, at control potentials negative enough to begin to electrodeposit the platinum at a significant rate, simultaneous reduction of hydrogen ion reduces the current and energy efficiency to an unacceptable level.

"There is a great interest in the treatment of spent autocatalyst because, due to large amounts of PGM used by catalytic converters, the autocatalyst scrap is the largest and constantly growing source of PGM available for recycling. A hydrometallurgical method of PGM extraction from honeycomb type catalyst containing platinum (800-1200 ppm) and rhodium (50-60 ppm) using HCl-AlCl$ sb3$-HNO$ sb3$ or HCl-HNO$ sb3$ mixtures was studied. Experimental results of the leaches performed in a bench scale tubular reaction with recycled continuous flow of the leaching solution as well as 1000 cc stirred reactor are presented. The results suggest that Cl$ sp-$ single ion activity plays a decisive role in controlling the PGM dissolution. The extent of PGM recovery increased not by increasing HCl concentration to very high levels, but by keeping a relatively low total Cl$ sp-$ level (2.5 M) with a significant proportion present as AlCl$ sb3$. Rhodium extraction was always 5-10% lower than platinum, and it appears that increasing the AlCl$ sb3$/HCl ratio tends to increase rhodium recovery. High temperature (85-95$ sp circ$C) and an HNO$ sb3$ concentration around 3-3.5 M play very important roles in effectiveness of PGM extraction. The presented method of HCl-AlCl$ sb3$-HNO$ sb3$ tubular reactor leaching supplemented by solvent extraction (Kelex 100) of PGM from pregnant solution appears to be very attractive for small size (5-20 tonnes of catalyst/day) installations." --

This book describes and explains the methods by which three related ores and recyclables are made into high purity metals and chemicals, for materials processing. It focuses on present day processes and future developments rather than historical processes. Nickel, cobalt and platinum group metals are key elements for materials processing. They occur together in one book because they (i) map together on the periodic table (ii) occur together in many ores and (iii) are natural partners for further materials processing and materials manufacturing. They all are, for example, important catalysts – with platinum group metals being especially important for reducing car and truck emissions. Stainless steels and CoNiFe airplane engine super alloys are examples of practical usage. The product emphasises a sequential, building-block approach to the subject gained through the author's previous writings (particularly Extractive Metallurgy of Copper in four editions) and extensive experience. Due to the multiple metals involved and because each metal originates in several types of ore – e.g. tropical ores and arctic ores this necessitates a multi-contributor work drawing from multiple networks and both engineering and science. Synthesizes detailed review of the fundamental chemistry and physics of extractive metallurgy with practical lessons from industrial consultancies at the leading international plants Discusses Nickel, Cobalt and Platinum Group Metals for the first time in one book Reviews extraction of multiple metals from the same tropical or arctic ore Industrial, international and multidisciplinary focus on current standards of production supports best practice use of industrial resources

Hydrometallurgy '94 contains the 78 papers that were presented at the international symposium organized by the Institution of Mining and Metallurgy and the Society of Chemical Industry and held in Cambridge, England, in July 1994. In the papers specific attention is paid to the concept of sustainable development and the associated ideas of cleaner technology, recycling and waste minimization that have particular relevance to the extractiona nd processing of metals and other mineral products. The papers, by authors from 30 contries, are grouped under the headings: Hydrometallurgy and Sustainable Development; Materials Production and the Environment; Fundamentals; Leaching; Bioprocessing; Gold Solution Purification; Effluent Treatment; Processes; and Recycling.

Resource recovery and recycling from millions of tons of wastes produced from industrial activities is a continuing challenge for environmental engineers and researchers. Demand for conservation of resources, reduction in the quantity of waste and sustainable development with environmental control has been growing in every part of the world. Resource Recovery and Recycling from Metallurgical Wastes brings together the currently used techniques of waste processing and recycling, their applications with practical examples and economic potentials of the processes. Emphasis is on resource recovery by appropriate treatment and techniques. Material on the subject is scatterend in waste management and environmental related journals, conference volumes and government departmental technical reports. This work serves as a source book of information and as an educational technical reference for practicing scientists and engineers, as well as for students. Describes the currently used and potential techniques for the recovery of valuable resources from mineral and metallurgical wastes Discusses the applications to specific kinds of wastes with examples from current practices, as well as eht economics of the processes Presents recent and emerging technologies of potentials in metal recycling and by-product utilization

This collection presents papers from a symposium on extraction of rare metals as well as rare extraction processing techniques used in metal production. Rare metals include strategic metals that are in increasing demand and subject to supply risks. Metals represented include neodymium, dysprosium, scandium and others; platinum group metals including platinum, palladium, iridium, and others; battery related metals including lithium, cobalt, nickel, and aluminum; electronics-related materials including copper and gold; and refectory metals including titanium, niobium, zirconium, and hafnium. Other critical materials such as gallium, germanium, indium and silicon are also included. Papers cover various processing techniques, including but not limited to hydrometallurgy (solvent extraction, ion exchange, precipitation, and crystallization), electrometallurgy (electrorefining and electrowinning), pyrometallurgy, and aeriometallurgy (supercritical fluid extraction). Contributions are focused on primary production as well as secondary production through urban mining and recycling to enable a circular economy. ?A useful resource for all involved in commodity metal production, irrespective of the major metal Provides knowledge of cross-application among industries Extraction and processing of rare metals that are the main building block of many emerging critical technologies have been receiving significant attention in recent years. The technologies that rely on critical metals are prominent worldwide, and finding a way to extract and supply them effectively is highly desirable and beneficial.