Analysis of lead-acid battery desulfurization process

How much desulfurizer is required for sodium-calcium double alkali lead paste slurry?
Hence,based on the minimum specific gravity of industrial lead paste slurry,the concentration of desulfurizer required for sodium-calcium double alkali lead paste desulfurization was estimated to be at least 2.32 mol/L. 3.2. Mechanism of a novel process of lead paste pre-desulfurization

Is there a recycling method for waste lead acid batteries?
A new atom-economical method for the recovery of wasted lead-acid batteries in the production of lead oxide, CN Patent, 201310084392.X (2013). Pan, J., Song, S., Sun, Y. & Niu, Y. A recycling method of waste lead acid batteries for the directly manufacturing of high purity lead oxide.

How to desulfurize lead paste by regenerated alkali?
The desulfurization of lead paste by regenerated alkali was as follows: (i) desulfurization was conducted by adding waste lead paste to a beaker containing a certain volume of regenerated NaOH solution and stirred. (ii) After the desulfurization reaction was complete, filter residue and filtrate were obtained by vacuum filtration.

What is a new process of lead recovery from waste lead-acid batteries?
Pan JQ,Zhang C,Sun YZ,Wang ZH,Yang YS (2012) A new process of lead recovery from waste lead-acid batteries by electrolysis of alkaline lead oxide solution. Electrochem Commun 19:70-72 Xing P,Wang C,Wang L (2019) Hydrometallurgical recovery of lead from spent lead-acid battery paste via leaching and electrowinning in chloride solution.

What is a direct desulfurizer for lead paste?
NaOHwas used as the direct desulfurizer for lead paste,and lime was used to regenerate NaOH from the mother liquid at sufficient concentrations for desulfurization.

What is the recovery of lead from spent lead acid battery paste (SLP)?
The recovery of lead from spent lead acid battery paste (SLP) is not only related to the sustainable developmentof the lead industry,but also to the sustainable evolution environment.

In this paper, a novel approach to recover PbO from lead pastes of spent lead acid batteries by desulfurization and crystallization in sodium hydroxide (NaOH) solution after ...

Based on the results presented in thermodynamic analysis and low-temperature smelting process, an integrated flowsheet was proposed for the recovery of lead from waste lead-acid batteries at the scale of 200, 000 tons annually since 2019 (Fig. 7). The whole production line mainly included raw materials process, smelting process and gas treatment process. In raw ...

Analysis of lead-acid battery desulfurization process

Malak, D. (2010) Comparative Analysis Processes for Desulphurization of Battery Paste. MSc Thesis. (In Polish) has been cited by the following article: TITLE: Application of a Sulfur ...

The recovery of lead from spent lead acid battery paste (SLP) is not only related to the sustainable development of the lead industry, but also to the sustainable evolution environment. An innovative process is proposed for the recovery of high purity metallic lead from spent lead acid battery paste (SLP) by electrodeposition at 333-353 K in choline chloride-urea ...

An innovative process is proposed for the recovery of high purity metallic lead from spent lead acid battery paste (SLP) by electrodeposition at 333-353 K in choline chloride ...

Bibliometric analysis of recovery of spent lead-acid battery based on recent publications from 1987 to 2018 shows that the organic acid leaching-calcination process is the most frequently published technology in hydrometallurgical processes, meanwhile leady oxide and lead oxide are the most recovered products. Previous article in issue; Next article in issue; ...

Lead-acid batteries (LABs) ... A green recycling process of discarded lead-acid battery paste, which could avoid both the smelting and electro-winning route has been developed and the results showed that the desulphurization efficiency of lead paste was up to 99.9%. Expand. 9. Save. A novel process combined with flue-gas desulfurization technology to reduce ...

Semantic Scholar extracted view of "A novel process combined with flue-gas desulfurization technology to reduce lead dioxide from spent lead-acid batteries" by Ma Yang et al. Skip to search form Skip to main content Skip to account menu. Semantic Scholar"s Logo. Search 223,380,332 papers from all fields of science. Search. Sign In Create Free Account. ...

This paper reports a new method of direct recovery of highly pure lead oxide (PbO) from waste lead pastes and lead grids of spent lead-acid batteries via catalytic conversion, desulfurization, and recrystallization processes in sequence. On the basis of the analytical results of lead (Pb) and lead dioxide (PbO2) contents in the scrap lead paste, a certain amount of ...

The invention relates to a method of desulphurizing battery paste in the process of recycling lead-acid batteries. The paste desulphurizing stage of the method according to the invention is carried out in an aqueous solution of a defined amine or of a mixture of polyamines, wherein the said solution is saturated with carbon dioxide to remove the remainder of calcium from the solution ...

Environmental effects for disposing of one ton of WPBs under different types of energy supply. As can be seen from Figure 6, different energy types cause different variations in each indicator.

A compatible environmental process consisted of hydrometallurgical desulfurization and vacuum thermal

reduction to recycle lead was investigated in this ...

Phase transformation mechanism in the reductive sulfur-fixing process of lead acid battery paste recycling. ... Lead acid battery recycling and material flow analysis of lead in Korea. J. Mater. Cycles Waste Manag., 20 (2017), pp. 1348-1354. Google Scholar. Karandikar, 2015. A.S.P.B. Karandikar. Review on desulfation of lead-acid battery for HEV. International ...

The traditional sodium desulfurization process for waste lead-acid batteries is beneficial to the environment; however, it is limited by poor economic viability as the cost of ...

There are four main components in spent lead acid battery: polymeric containers, lead alloy grids, waste acids and pastes. Among them, the pastes mainly comprise lead oxide (~9%), lead dioxide (~28%), lead sulfate (~60%) and a small amount of lead (~3%) (Zhu et al., 2012a) monly, lead from battery scrap has been smelted in blast furnace, electric furnace, ...

Here we demonstrate a new green hydrometallurgical process to recover lead based on a hydrogen-lead oxide fuel cell. High-purity lead, along with electricity, is produced with only water as...

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