Lead-acid battery decomposition and smelting

Does smelting temperature affect the recovery of lead from Battery residue?
The effect of smelting temperature on the recovery of lead from battery residue and lead sulphate. excess of the stoichiometric and it would be expected that sintering would increase the porosity of the pellet and thus promote indirect reduction. Since direct reduction is responsible for matte formation, the amount of matte should decrease.

How to recover lead from lead-acid batteries?
The current methods for the recovery of lead from lead-acid batteries are based on pyrometallurgical smelting. The various routes can be categorized according to the furnace type and the smelting operations involved. Gener- ally,secondary lead smelting is performed in two stages.

What is the effect of lead sulphate on smelting of battery residue?
Also indicated are the high partial pressures of sulphur dioxide which prevail in the presence of lead sulphate,and hence the emissions of SO2which occur during the conventional smelting of battery residue. There are two distinct regimes in the smelting reaction with carbon.

Can reductive sulfur-fixing smelting remove lead from a battery?
A new innovative process for one-step and cleaner extraction of leadfrom spent lead-acid battery by reductive sulfur-fixing smelting was presented. This paper summarized and discussed several potential sulfur-fixing agents and molten salts which can be used in this new technique.

Can lead-acid battery paste be recycled?
An innovative and environmentally friendly lead-acid battery paste recycling method is proposed. The reductive sulfur-fixing recycling technique was used to simultaneously extract lead and immobilize sulfur. SO 2 emissions and pollution were significantly eliminated.

What is a green recycling process of discarded lead-acid battery?
Zhu X,Zhang W,Zhang L,Zuo Q,Yang J,Han L (2019) A green recycling process of the spent lead paste from discarded lead-acid battery by a hydrometallurgical process. Waste Manage Res 37 (5):508-515

Diagrams of the relationship between the reaction free energy and temperature involved in the possible reaction of decomposition of lead carbonate: (A) R1; (B) R2; (C) R3; ...

Among these lead compounds, the PbSO 4 component is the most thermodynamically stable with a decomposition temperature of 1320 °C, resulting in the ...

1 Introduction. With the rapid development of the automobile industry, the production of lead-acid batteries

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(LABs) as the automotive ignition power source and energy ...

Keywords: lead-acid batteries; molten salts; lead smelting; desulfurization; solid waste recycling 1. Introduction Spent lead-acid battery paste is a valuable solid waste generated in large ...

Chen, CS, Shih, YJ, Huang, YH (2016) Recovery of lead from smelting fly ash of waste lead-acid battery by leaching and electrowinning. ... French, GJ (1986) Thermochemical ...

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The amount of lead smelting slag was 20.0-60.0 wt.%, which indicates that the lead smelting slag has been fully used. The leaching concentration of toxic elements in the ...

A facile method for the desulfuration of a waste lead-acid battery paste was proposed, in which tartaric acid-sodium tartrate was used as the leaching agent to yield lead ...

A process with potentially reduced environmental impact was studied to recover lead as ultra-fine lead oxide from lead paste in spent lead acid batteries.The lead paste was ...

Lead-acid battery (LAB) is a well-established battery system. It still holds a large share of the battery market nowadays and intensively used in automotive, power back-up ...

Spent lead paste (SLP) obtained from end-of-life lead-acid batteries is regarded as an essential secondary lead resource. Recycling lead from spent lead-acid batteries has ...

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