

Title (en)

SYSTEMS AND METHODS TO RECOVER VALUE-ADDED MATERIALS FROM GYPSUM

Title (de)

SYSTEME UND VERFAHREN ZUR RÜCKGEWINNUNG VON MEHRWERTMATERIALIEN AUS GIPS

Title (fr)

SYSTÈMES ET PROCÉDÉS POUR RÉCUPÉRER DES MATÉRIAUX À VALEUR AJOUTÉE À PARTIR DE GYPSE

Publication

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Application

**EP 22805261 A 20220516**

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Abstract (en)

[origin: WO2022245733A1] Disclosed herein are systems and methods from processing flue gas desulfurization (FGD) gypsum feedstock and ash feedstocks, either separately or together. FGD gypsum conversion comprises reacting FGD gypsum (calcium sulfate) feedstock or phosphogypsum, in either batch or continuous mode, with ammonium carbonate reagent to produce commercial products comprising ammonium sulfate and calcium carbonate. A process to separate the impurities and convert the calcium carbonate to a pure precipitated calcium carbonate is disclosed. These impurities include a concentrate of valuable Rare Earth Elements, and radioactive thorium and uranium. A process to convert calcium sulfite to calcium sulfate using oxygen and a catalyst is also disclosed. Ash conversion comprises a leach process followed by a sequential precipitation process to selectively precipitate products at predetermined pHs resulting in metal hydroxides which may be converted to oxides or carbonates. The processes may be controlled by use of one or more processors.

IPC 8 full level

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