PROCESS FOR PRODUCING SYNTHETIC PYRITE

ABSTRACT

Process of making high purity, synthetic FeS_2, and an electrochemical battery employing such synthetic FeS_2 in the positive electrode. Synthetic FeS_2 may be prepared by a sulfidation process comprising reacting ferric oxide, hydrogen sulphide, and elemental sulphur at a temperature above the melting point of element sulphur. Synthetic FeS_2 may also be produced by a milling process that comprises (i) milling iron powder and sulphur powder in the presence of a milling media and a processing agent to provide a homogeneous powder mixture, and (ii) treating the powder mixture to form FeS_2. In the milling process, the powder mixture may be treated to form FeS_2 by heating the powder mixture or subjecting the powder mixture to a subsequent milling operation.

Fig. 4