

Effect of PCA on the Amorphization of Graphite During High Energy Ball Milling

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Abstract

Ball milling of graphite to obtain an amorphous phase is usually encounter with some difficulties. It seems the most important problem is adhesion graphite particles together and to vial surface. A suitable PCA is very effective and essential to prevent above difficulties. In the present work, the effect of PCA on the behavior of graphite during ball milling was investigated. Stearic acid and ethanol as PCA were used and their effects were compared. Results showed that Stearic acid was more effective in preventing agglomeration of graphite particles, which was attribute to the more lubricating effect of stearic acid. The best condition was obtained by adding 1 weight percentage of stearic acid every 24 hours of milling to the vial.

Keywords: Amorphization of Carbon, Ball milling of Graphite, PCA, agglomeration

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