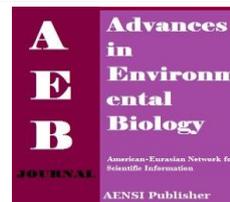




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Chemical MECHANO concurrent review of copper oxide, zinc oxide and lead oxide and the effect of temperature

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ABSTRACT

In this study, a mixture of powdered copper oxide, zinc oxide and lead oxide abrasive in grinding operations for different time periods under review were mechanical alloying. Variable parameter in this study involves the weight ratio of balls to temperature. Resuscitation reactions and alloy formation during mechanical alloying were studied by X-ray diffraction and electron microscopy. The results showed that the effect of temperature on the restoration of these oxides, it is concluded that the temperature of 250 ° C will produce a rapid growth in the peak intensities of the product. Studies also showed that the results showed that mixed mill for 4 hours with ball to powder weight ratio of 10 to 1, leading to the production of amorphous powders were obtained by annealing the powder particles with an average size ranging 15-10nm respectively. In the final step of the reaction had not attended NACI phase was removed by simple washing.

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INTRODUCTION

Mechanical alloying is the method of making a composite metal powders with very fine microstructure. Using this method can produce substances that uniformity of the ordinary methods such as melting and casting it not has access. The process of breaking a complex mechanical alloying, deformation, cold welding and low penetration distances between layers of powder that are occurring in a high-energy ball milling [1]. Mechanical alloying for the Resuscitation of the oxidized metal oxide powder by grinding with a reducing agent at room temperature was used. In fact, mechanical alloying is a suitable procedure for establishing and carrying out solid state reaction at room temperature the reaction between the new materials is in [2].

During mechanical alloying of mill balls drops into the trap. Entering the impacts of fire on the forces that power is highly dependent on the powder particles into severe plastic deformation caused by the pellets. It also provides the possibility of cutting the grains of bullet impact. To repeat the set, finer and finer grains become to the extent that they limit to the size of nanometers. However, the effect of milling operations, a large number of crystal defects in mixed network presents Yd. Mechanical reduction of oxide powders with graphite, the energy absorbed by the particles and causing changes in the activation energy of the reaction and facilitate the mutual influence of Cu, ZN and PB at temperatures leaded brass alloy formation, and finally possible below cause [5].

In this study, it was tried to use mechanical operations carried out by ball milling, Resuscitation operations on metal oxides of copper, zinc, lead, leaded brass and alloy, to produce may be conducted. For this purpose, the graphite was used as a reducing agent. Also, by changing the parameters of the milling operation, the weight of the bullet into the chamber temperature was attempting to establish appropriate conditions for the simultaneous Resuscitation oxides of copper, zinc and lead were studied.

Result:

Effect of temperature on the mechanical work has shown that after 20 hours, will begin his peak intensities oxides decreased. Mechanical alloying is the method of making a composite metal powders with very fine microstructure. Using this method can produce substances that uniformity of the ordinary methods such as melting and casting it not has access. Effect of temperature on the mechanical work has shown that after 20 hours, will begin his peak intensities oxides decreased. Simultaneously, some of the brass alloy is formed. This can cause the size of the fine particles which ultimately leads to the formation of NANOCRYSTALLINE structures [4]. Increase the amount of elastic deformation leads to an increase in the density of network defects,

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especially dislocations, causing plastic deformation and grain size is reduced. The results of the study indicated that at high temperatures, all the samples with a ratio of 1.31 for 30 h in the presence of the 150 to 300 °C milling radiation were given. Rice peaks rise sharply with increasing temperature, due to the influence of temperature on the thermodynamic parameters and kinetics of the process is concerned. With increasing temperature, the peak intensity of the zinc oxide is observed. Oxidation at elevated temperatures will be higher. After 30 hours of milling operations are particles with dimensions of 70 to 182 nanometers.

Studies also showed that the milling mixture of ball to powder weight ratio of 10 to 1, and the rotation speed of 350rpm for 50 hours with the exception of the fine structure, the phase change occurred. But with a ball to powder weight ratio of 20 to 1, and the rotation speed of 450rpm, the gradual reclamation of silver oxide to silver and silver powder with NANO scale crystals of about 17 nm were formed. The Review has been shown that the mechanical work, Resuscitation oxides of copper, zinc and lead are simultaneously in the presence of graphite will be possible by increasing the temperature increases the rate of Resuscitation reactions. Ratio of 1.31 at 30 hours and at temperatures of about 300 °C with peak intensities of the brass alloy is 3.5 times the corresponding peak in the ambient temperature.

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