

Reaction behavior of AgCl powder as mechanochemical process

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The Synthesis of nanosized noble metal particles has attracted considerable interest in various fields of chemistry due to their physicochemical properties and their applications in many areas, such as optics, microelectronics, catalysis, mechanics, information storage, and energy conversion. The shape and size of particles affect properties and it is therefore to develop an effective method with well controlled shape and size. The synthetic method of silver powder can be various methods such as, thermal decomposition method, colloidal micellar, photochemical, electrochemical method but they often feature relatively slow rates of synthesis, which makes commercial use unrealistic. So In this study, one scalable method for the production of silver powder that can be employed at an industrial scale is mechanochemical processing. The materials used in this study were AgCl powder and CaO, NaOH. The reactant mixture was loaded and performed in an argon atmosphere. The as-milled powders were washed several times with distilled water and dried. The microstructure of the powders was studied using scanning electron microscopy. The crystal structure was defined by X-ray diffractometry using Cu-K α radiation.