CuO nanocrystals embedded in KBr single crystal: Elaboration and characterization

Authors
Lazhar Bouhdjer, Samyia Addala, Ouahiba Halimi, Miloud Sebais, Boubaker Boudine

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Description
More recently, there are important number of papers which have been stimulated by the optical characteristics of crystalline matrixes doped with quantum dots (QDs), nanoparticles (NPs) or nanocrystals (NCs) of semiconductors. In this context, we suggest this investigation, which highlights the doping effects of CuO (NCs) on structural and optical properties of KBr single crystal. In this approach, we expose a simple and realizable technique for embedding CuO NCs as three dimensions (3D) defects in a KBr crystalline matrix. The Czochralski method was used to obtain a KBr:CuO single crystal starting from inhomogeneous phase melt-NCs in the crystallization melting-pot. However, the nano-regime of guest material creates a difficult challenge, because there is a possibility of fusing of the CuO NCs during the crystal growth process. Nevertheless, the whole structural results prove that the NCs inside KBr:CuO single …