

Abstract

The present invention provides heteroatom-doped nanodiamond particles having a fluorescence emission peak derived from heteroatom-vacancy (Heteroatom-V) centers and satisfying conditions consisting of: (i) when 1 μL of a 1 mass% aqueous suspension of the heteroatom-doped nanodiamond particles is added dropwise onto a glass substrate, and fluorescence spectra are acquired for 101×101 spots using a microscopic Raman apparatus at a spatial resolution of 1 μm and in a sample range of $100 \mu\text{m} \times 100 \mu\text{m}$, the percentage of the number of bright spots emitting fluorescence with a ZPL peak at $\text{ZPL} \pm X \text{ nm}$ ($0 \leq X \leq 5$) of the Heteroatom-V centers is 50% or greater; and (ii) an average size of primary particles is from 2 to 70 nm.

FIG. 1