

Ferroelectric and relaxor ferroelectric to paraelectric transition based on Lead Magnesium Niobate (PMN) materials

Abstract

First ferroelectric materials were found in Rochelle salt was in a perovskite structure. Lead Magnesium Niobate (PMN) is a perovskites with a formula of $PbMg_{1/3}Nb_{2/3}O_3$ (PMN) and are typical representatives for most of all ferroelectrics materials with relaxor characteristic. It posses high dielectric permittivity which nearly $\sim 20,000$ [1] with a broad dielectric permittivity characteristic, known as relaxor ferroelectric below room temperature. Some of the researcher might think that the transition from relaxor ferroelectric to paraelectric is similar to the characteristic as observed from ferroelectric to paraelectric, but it is not necessary. The puzzling is how do we categorise them. How is the domain structure look like typically in ceramic materials.

Keywords

Ferroelectric; Lead Magnesium Niobate (PMN); Relaxor ferroelectric and paraelectric