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The influence of preparation technology on phase transitions in $NaNO_2$ embedded into porous glass

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Keywords

porous glass, ferroelectric, phase transition, size effect

Abstract

The dielectric properties of sodium nitrite embedded into porous glasses with the average pore diameter of 45 nm and 320 nm have been studied. The samples were obtained by immersion of empty porous glass into the melted $NaNO_2$ and then they stayed there for 24 and 8 hours. The sequence of phase transitions (PT) from the paraelectric phase to the sinusoidal antiferroelectric phase and to the ferroelectric phase has been observed in these nanocomposite materials on cooling. It is shown that due to the size effect, the temperatures of these PTs are lower than in bulk $NaNO_2$.

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