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The peculiarities of phase transformations and crystallisation in lattice packing nanocavities of silica nanospheres matrices

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Abstract

The structure and composition of 3D nanostructures based on lattice packing of SiO₂ nanospheres (opal matrices) containing clusters of crystalline phase in the interspherical cavities, these clusters being electro-optically active or possessing high inductivity, are studied. Reflectance and Raman spectra and also real and imaginary inductivity components of the synthesised metamaterials are investigated within the range of 1MHz to 20 THz. (11 References).