signal with g-factor 2,006 connected with E`centers decrease. A possible reason for that can be the change of the IMS under laser irradiation and compressive stresses appear in SiO_2 instead the tensil stresses. This assumption is confirmed by the change of the samples bending after laser irradiation.

SYNTHESIS AND CHARACTERIZATION OF NANOSTRUCTURED STOICHIOMETRIC AND NON-STOICHIOMETRIC NI-ZN FERRITES

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The spinel Ni-Zn ferrites for a long time has been used in various electromagnetic applications and electronic devices, such as transformer cores, microwave absorbing materials and devices, inductors etc. Currently there is interest to make nanostructured Ni-Zn ferrite in order to increase resistivity and reduce energy loses, as well as reduce structural and chemical heterogeneity [1].

It is important in many applications to control the resistivity of nanostructured ferrites, but information about electric, dielectric and structure properties of Ni-Zn ferrite is still limited. Also little research has been conducted on nanostrucutred non-stoichiometric Ni-Zn ferrite and ability to control and improve its structural and electrical properties.

Generally the spinel ferrite structure with general formula AB_2O_4 contains 8 tetrahedral coordinated sites (A) and 16 octahedral coordinated sites (B) for metal cation occupancy [2]. Ni-Zn ferrite has mixed spinel structure – both divalent and trivalent ions are located among tetrahedral and octahedral sublattice sites [2]. Normally in Ni-Zn ferrite Zn^{2+} shows a strong preference for occupying the tetrahedral sites while Ni^{2+} prefers incorporation at the octahedral sites, but in nanosized Ni-Zn ferrite the partial inversion of cation distribution is possible [3], thus electric and dielectric properties can be affected.

For nanosized particles lower sintering temperatures are necessary providing to prevent grain growth and increase volume of grain boundaries, as well as reduce concentration of localized charge carriers.

It is known that by increasing sintering temperature Zn^{2+} loss increases and Fe^{2+} ions are created. Divalent iron ion gives chance to electron hopping between Fe^{2+} and Fe^{3+} thus increasing charge carrier concentration and conductivity of the Ni-Zn ferrite [4].

The aim of the present study is to investigate the structural, electrical and dielectric properties of stoichiometric and iron excess ferrites prepared by sol-gel auto-combustion method.

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MAGNETIC PROPERTIES AND MORPHOLOGY OF MANGANESE FERRITE NANOPARTICLES IN GLASSES

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Owing to their extraordinary physical properties, glassy systems containing magnetic nanoparticles have received a considerable attention. Of particular interest are potassium-alumina-borate glasses that exhibit behaviour characteristic of magnetically ordered substances already at paramagnetic oxide concentrations of ca. 2-3 wt. %, so that

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