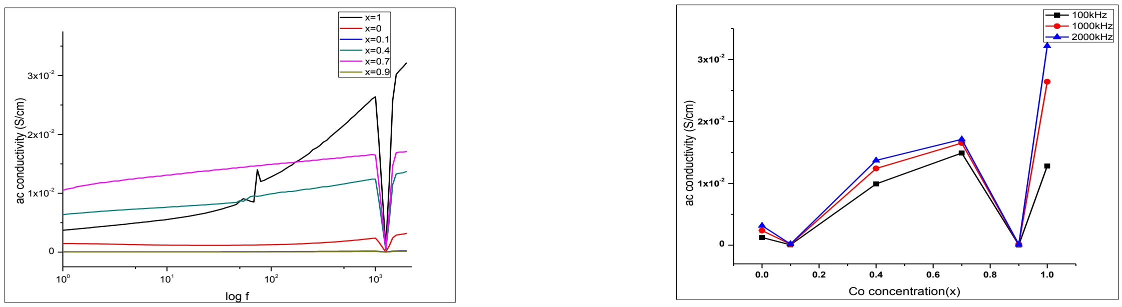
conductivity with increase in frequency and chase the dynamical law. Presence of Co on octahedral sites results conduction mechanism which is predominant in Co-Zn ferrites. Conduction mechanism is due to hopping of electrons from Fe^{2+} to Fe^{3+}. Increase in ac conductivity at higher values of frequency may be due to enhancement in conduction mechanism.



(a) (b)

Fig. 3 Variation of AC conductivity with frequency and Co concentration

Conclusion

Nanoparticles of Co-Zn ferrites have been prepared using chemical co precipitation method. XRD confirmed the formation of cubic phase crystal. Dielectric constant (ε'), dielectric loss (ε''), and tangent loss (tan δ) decreased with frequency showing dispersion in low frequency region and remained steady state in high frequency region. Dielectric loss depends on conduction loss and electric polarization of the samples. The AC conductivity (σ) of prepared samples exhibited increasing trend with increase in frequency. Dependence of all these parameters on composition was also investigated. Maxwell-Wagner model was used to clarify dielectric polarization of synthesized material.

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