

Characterization of LiZnTi Ferrites Doped by Gd and In

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Abstract. The inspiration for this article was the growing interest in advanced magnetic materials and their use in telecommunications, electrical engineering, and industry. The article will be focused on investigating the influence of chemical composition and preparation technology with the aim of improving the electromagnetic properties of magnetic materials. It involves the design and synthesis of lithium zinc titanium ferrite substituted with metal ions (Gadolinium and Indium). Attention will be devoted primarily to studying the structural and magnetic characteristics of the prepared ferrites. The relationship between microstructural features and electromagnetic behavior is analyzed in order to identify trends relevant for high-frequency applications. The obtained results provide insight into how targeted ionic substitution and processing conditions can be used to tailor ferrite properties. These findings contribute to the development of ferrimagnetic materials with improved performance for desired application in electrical devices.