# SYNTHESIS of SrFe2O4 NEEDLE-LIKE NANOSTRUCTURES VIA GREEN ROUTE

**Hakan ÇOLAK**

**Science Faculty, ChemistryDepartment, Çankırı Karatekin University, Çankırı, Türkiye**

**0000-0001-5338-1749**

|  |
| --- |
| **ABSTRACT**  Nanostructured materials show interesting chemical and physical properties, significantly different from those of bulk materials, due to their small size and large specific surface area [1], [2], [3]. Among the nanostructured materials with different shapes and sizes, spinel ferrite nanostructures have great interest due to their technological applications in the microwave industries, for high-speed digital tape or disk recording, the production of repulsive suspensions for use in levitated railway systems, ferrofluids, and magnetic refrigeration systems.  In this study, Strontium spinel ferrite needle-like nanostructures (SrFe2O4) were produced via green route. The crystal structure and morphology of the samples were characterized by X-ray diffraction (XRD) and field emission scanning electron microscopy (FESEM). The results of XRD patterns indicated that the ferrite phase was formed. And, the FESEM micrographs showed that the samples have needlelike nanostructures.  **References:**  [1] Srivastava, M., Ojha, A. K., Chaubey, S., & Materny, A. (2009). Synthesis and optical characterization of nanocrystalline NiFe2O4 structures. Journal of Alloys and Compounds, 481 (1-2), 515-519.  [2] Pannaparayil, T., Marande, R., Komarneni, S., & Sankar, S.G. (1988). A novel low-temperature preparation of several ferrimagnetic spinels and their magnetic and Mössbauer characterization. Journal of Applied Physics, 64 (10), 5641-5643. |

# Keywords: Nanostructures, Spinels, SrFe2O4, Green synthesis