



Hafiz Mohammed Ibrahim Abdallah

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Physics

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Sudan

I am a graduate of University of Al Fashir (Sudan) with distinction, where I am presently a Lecturer. I have MSc in Materials Science from University of El-Neelain (Sudan) in 2004. I obtained my PhD degree at the University of KwaZulu-Natal (UKZN) (January 2009 - June 2012) in Condensed Matter Physics and Materials Science. I joined UKZN for Post-doctoral research position in June 2012 to date. I have three times been a recipient of UKZN conference support for attending International conferences. I was also a recipient of the Turkey Young Scientist Fellow for attending International conference on Superconductivity and Magnetism, 2012. My research involves the synthesis, structural, magnetic and electrical characterizations of bulk and nanoparticle mixed ferrites. My research is motivated by how the fundamental properties of materials depend on microstructure.

CURRENT RESEARCH

Topic	Methodology	Application
Synthesis, Structural, Magnetic and Electrical Properties of Substituted Spinel- and Hexagonal-Ferrite Oxides	<ul style="list-style-type: none"> Syntheses of oxide ferrites using wet chemical and mechanical milling technique. Investigate structure using X-ray diffraction, transmission/scanning electron microscopy, EDX, ... Investigate the magnetic properties, metal cations distributions and transition temperatures using Mössbauer spectroscopy, VSMs, SQUID. Investigate the electrical behavior by four-probe technique and cryogen free measurement system. 	Information storage technology, antenna rods, additives in iron and steel industry, biomedical, fuel cells, telecommunication, catalysts, ...

UKZN main Publications (13 articles)

- Hafiz M. I. Abdallah**, T. Moyo and J. Z. Msomi: Magnetic properties of nanosized $\text{Mg}_{0.5}\text{Mn}_{0.5}(\text{RE})_{0.1}\text{Fe}_{1.9}\text{O}_4$ ferrites synthesized by glycol-thermal method, *Journal of Magnetism and Magnetic Materials (Elsevier)* **332** (2013) 123-129.
- Hafiz M. I. Abdallah** and Thomas Moyo: Structural and magnetic studies of $(\text{Mg}, \text{Sr})_{0.2}\text{Mn}_{0.1}\text{Co}_{0.7}\text{Fe}_2\text{O}_4$ nanoferrites: *Journal of Alloys and Compounds (Elsevier)* **562** (2013) 156-163.
- H. M. I. Abdallah** and T. Moyo: The influence of annealing temperature on the magnetic properties of $\text{Mn}_{0.5}\text{Co}_{0.5}\text{Fe}_2\text{O}_4$ nanoferrites synthesized via mechanical milling method, *Journal of Superconductivity and Novel Magnetism (Springer)*, **26** 4 (2013) 1361–1367.
- Michael Lee Branham, Thomas Moyo, **Hafiz M. I. Abdallah** and Patrick Masina: Tetracycline-ferrite nanocomposites formed via high-energy ball milling and the influence of milling conditions, *European Journal of Pharmaceutics and Biopharmaceutics (Elsevier)* **83** (2013) 184-192.
- For more publications visit the link: <http://scholar.google.co.za/citations?user=vfDqh58AAAAAJ&hl=en>
- At least 6 articles under review

Past Researches

- H. M. Ibrahim**, O. A. Yassin, P. F. de Chatel and S. N. Bhatia: Evidence for the Griffiths phase in pure and Y-, Ca- and Cr-doped $\text{LaSr}_2\text{Mn}_2\text{O}_7$ manganites, *Solid State Communications (Elsevier)*, **134** (2005) 695-698.

Future Interests

Interdisciplinary research include applications of the nanoparticle ferrites (drug delivery and biomedical)

Extra Interests

Reading; travelling; music; football ...