

BOOK of ABSTRACTS

25th Congress of Chemists and Technologists of Macedonia



19-22 9 2018
OHRID, R MACEDONIA





Сојуз на хемичарите и технолозите на Македонија

Society of Chemists and Technologists of Macedonia

**25th Congress of SCTM
with international participation**

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The 25th Congress of SCTM is a



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BIOCOMPATIBLE MAGNETIC COLLOIDS: INSIGHT INTO THE STRUCTURE, MORPHOLOGY AND INFLUENCE OF EXTERNAL MAGNETIC FIELD

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Cobalt ferrite (CoFe₂O₄) particles have been prepared in nanocrystalline form by several techniques (hydrothermal synthesis, ultrasonic assisted synthesis, microemulsion synthesis, mechanochemical synthesis and microwave synthesis). All samples were coated with starch to find biomedical applications in the field of drug delivery, MRI and hyperthermia. Cobalt ferrite is chosen because its high magneto-crystalline anisotropy that originates from the spin-orbit coupling at crystal lattices. The synthesized coated and uncoated nanoparticles were characterized by X-ray powder diffraction (XRPD), Fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy (SEM). Light transmitting measurements of laser beam of 655 nm propagating through starch coated CoFe₂O₄ nanoparticles, under the influence of an external magnetic field, were presented.

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Keywords: ferrofluids, starch coating, cobalt ferrite.

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