

ANALYSIS DATA SHEET

IONSOL 6W

Particle size analysis

The particle size measurement was performed using a transmission electron microscope (STEM) Tecnai TF 20 X-TWIN (FEI).

Image no 1 (scale 100 nm)

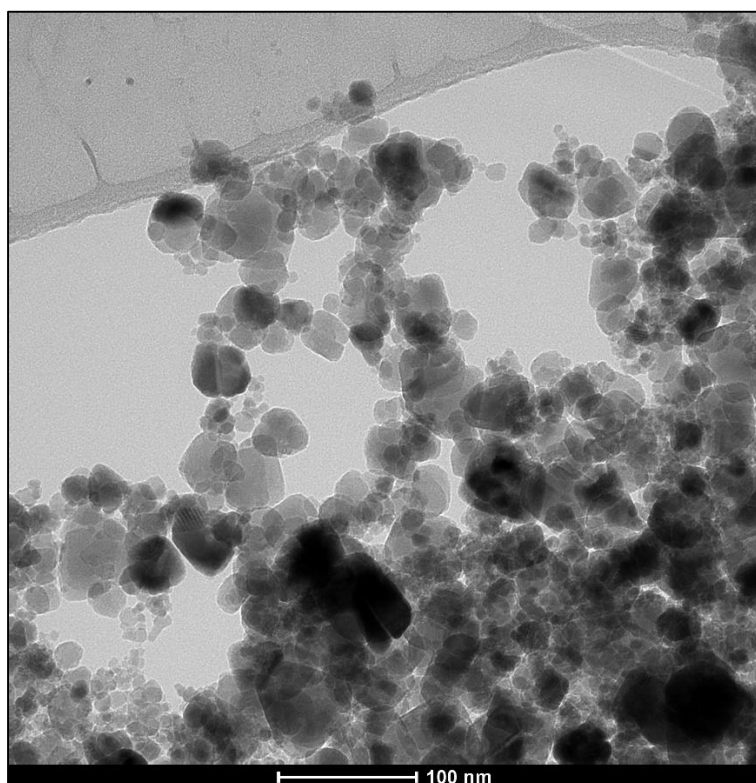


Image no 2 (scale 50 nm)

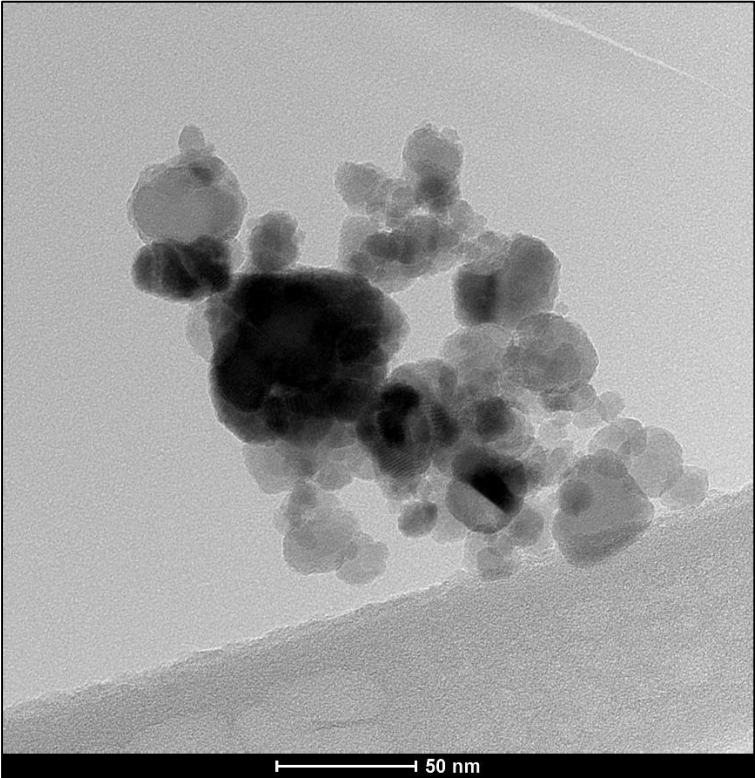
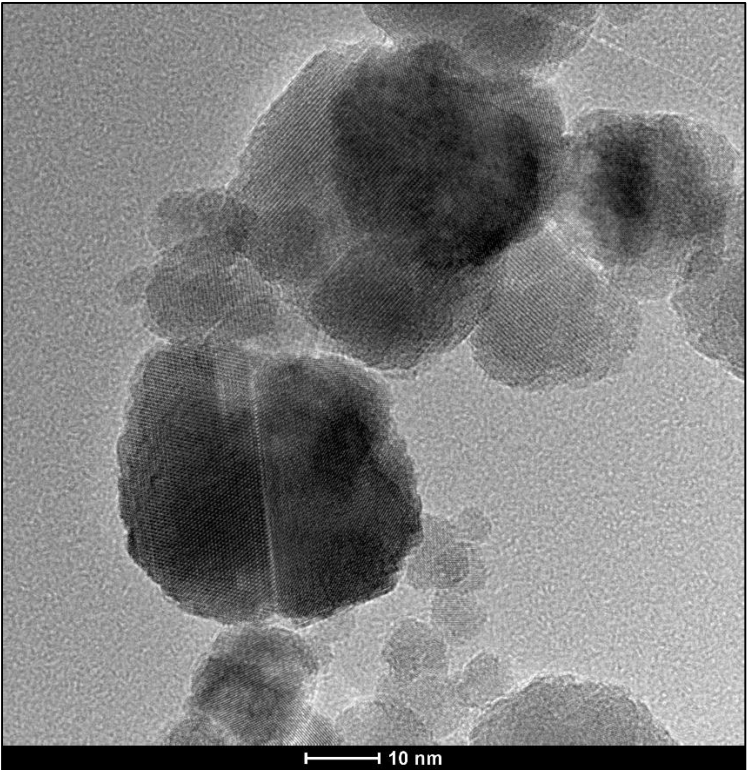


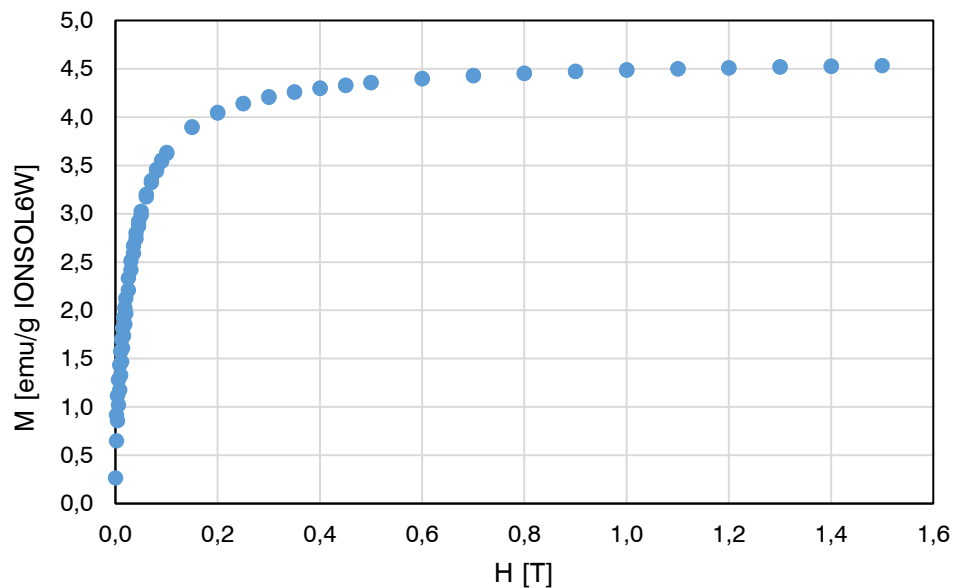
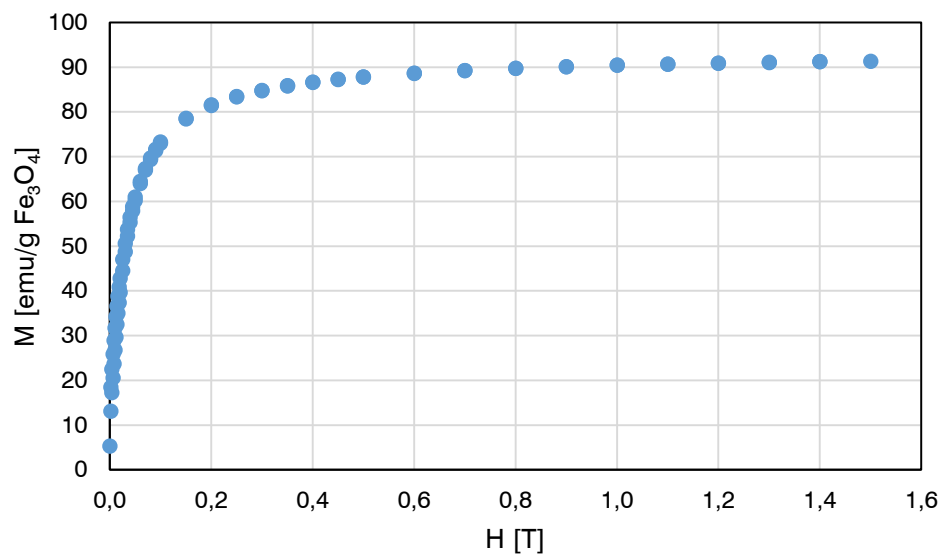
Image no 3 (scale 10 nm)



Magnetization analysis

The measurement of saturation magnetization was carried out using a Vibrating Sample Magnetometer (VSM) by Quantum Design with the parameters:

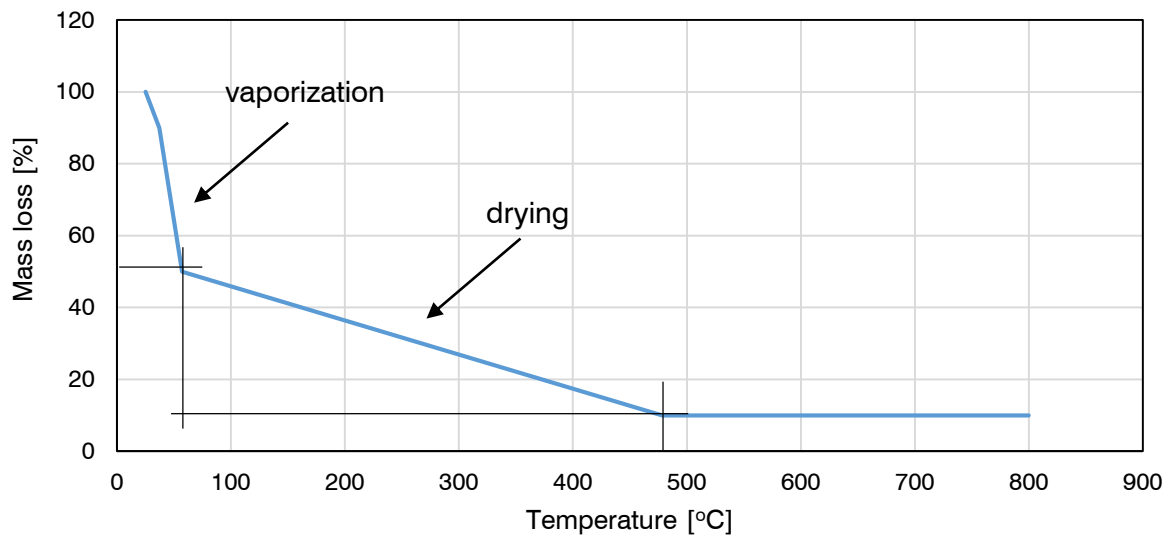
- magnetic field range: $\pm 1,5\text{T}$,
- temperature: 300 K.



Thermogravimetric analysis TGA

The analysis was carried out under nitrogen conditions with the temperature range from room temperature to 800 ° C with a temperature increase of 10 ° C/min.

The sample lost about 90% of its mass. The last significant change was observed at the temperature of 478 ° C. Up to the highest temperature to which the analysis was performed, the weight loss of the sample did not change, which means that at 800 °C about 10% by mass remained.



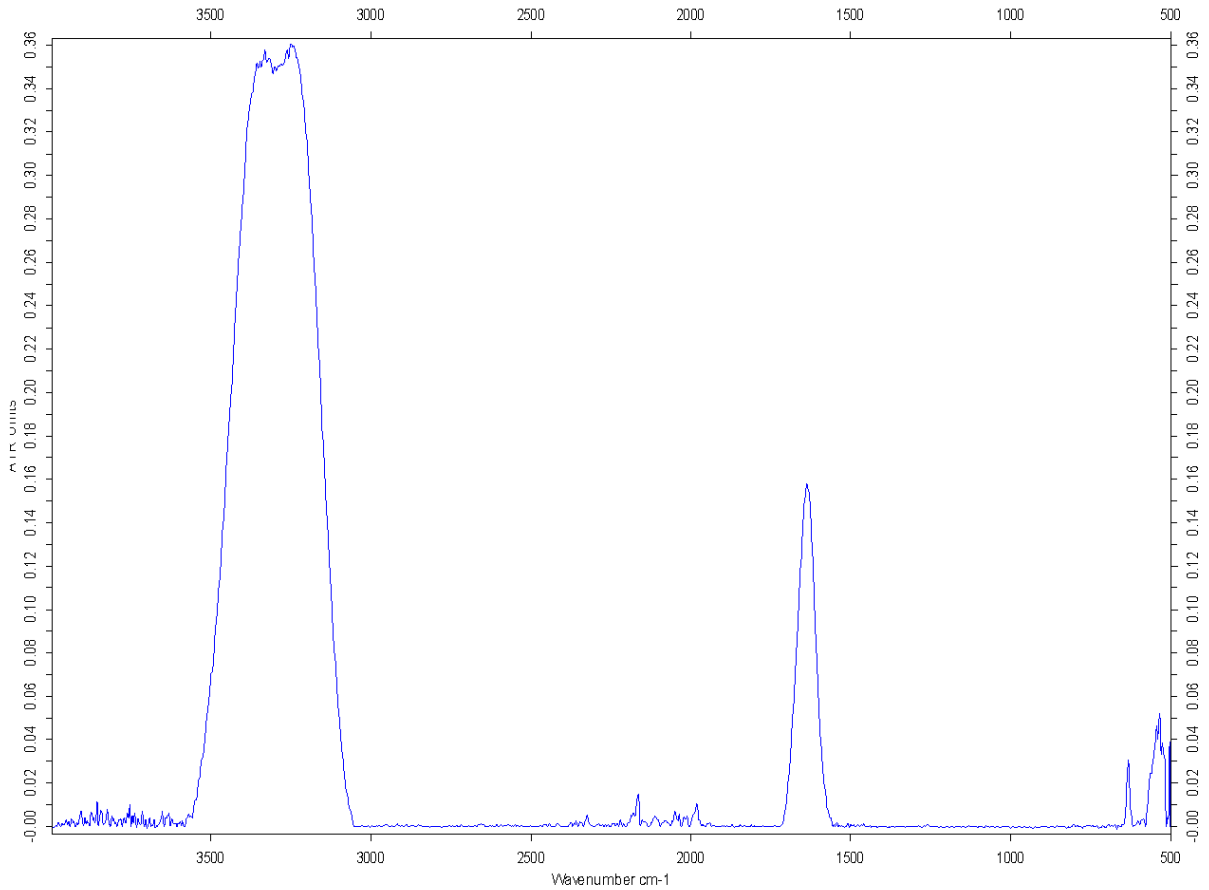
Spectrophotometric analysis FTIR

3000 do 3500 cm^{-1} = ν (O–H)

1650 cm^{-1} = δ (O–H)

600 cm^{-1} = ν (Fe–O)

650 cm^{-1} = ν (Fe–O)



2.3 WCON T.O, 25/08/2022, 10:26:27.035 (GMT+2), TENSOR 27, Golden Gate

FTIR analysis showed that the particles were of high purity. The spectrum shown is characteristic of iron (II, III) oxide.

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