Yttrium-Doped Iron Oxide Nanoparticles for Magnetic Hyperthermia Applications

Przemyslaw Kowalik[a], Jakub Mikulski[a], Anna Borodziuk[a], Magdalena Duda[a], Izabela Kaminska[a], Karolina Zajdel[c], Jaroslaw Rybusinski[b], Jacek Szczytko[b], Tomasz Wojciechowski[a], Kamil Sobczak[d], Roman Minikayev[a], Magdalena Kulpa-Greszta[e], Robert Pazik[f], Paulina Grzaczkowska[a,b], Krzysztof Fronc[a], Mariusz Lapinski[g], Malgorzata Frontczak-Baniewicz[c], Bozena Sikora[a]*

[a] Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 42/46, PL-02668, Warsaw, Poland; [b] Institute of Experimental Physics, Faculty of Physics, University of Warsaw, ul. Pasteura 5, PL-02093, Warsaw, Poland; [c] Mossakowski Medical Research Centre, Polish Academy of Sciences, ul. Pawinskiego 5, PL-02106, Warsaw, Poland; [d] Faculty of Chemistry, Biological and Chemical Research Centre, University of Warsaw, ul. Zwirki i Wigury 101, PL-02089, Warsaw, Poland; [e] Faculty of Chemistry, Rzeszow University of Technology, Al. Powstancow Warszawy 12, PL-35959 Rzeszow, Poland; [f] Faculty of Biotechnology, University of Rzeszow, Ul. Pigonia 1, PL-35310 Rzeszow, Poland; [g] Department of Hypertension, Medical University of Warsaw, ul. Zwirki i Wigury 61, PL-02091, Warsaw, Poland
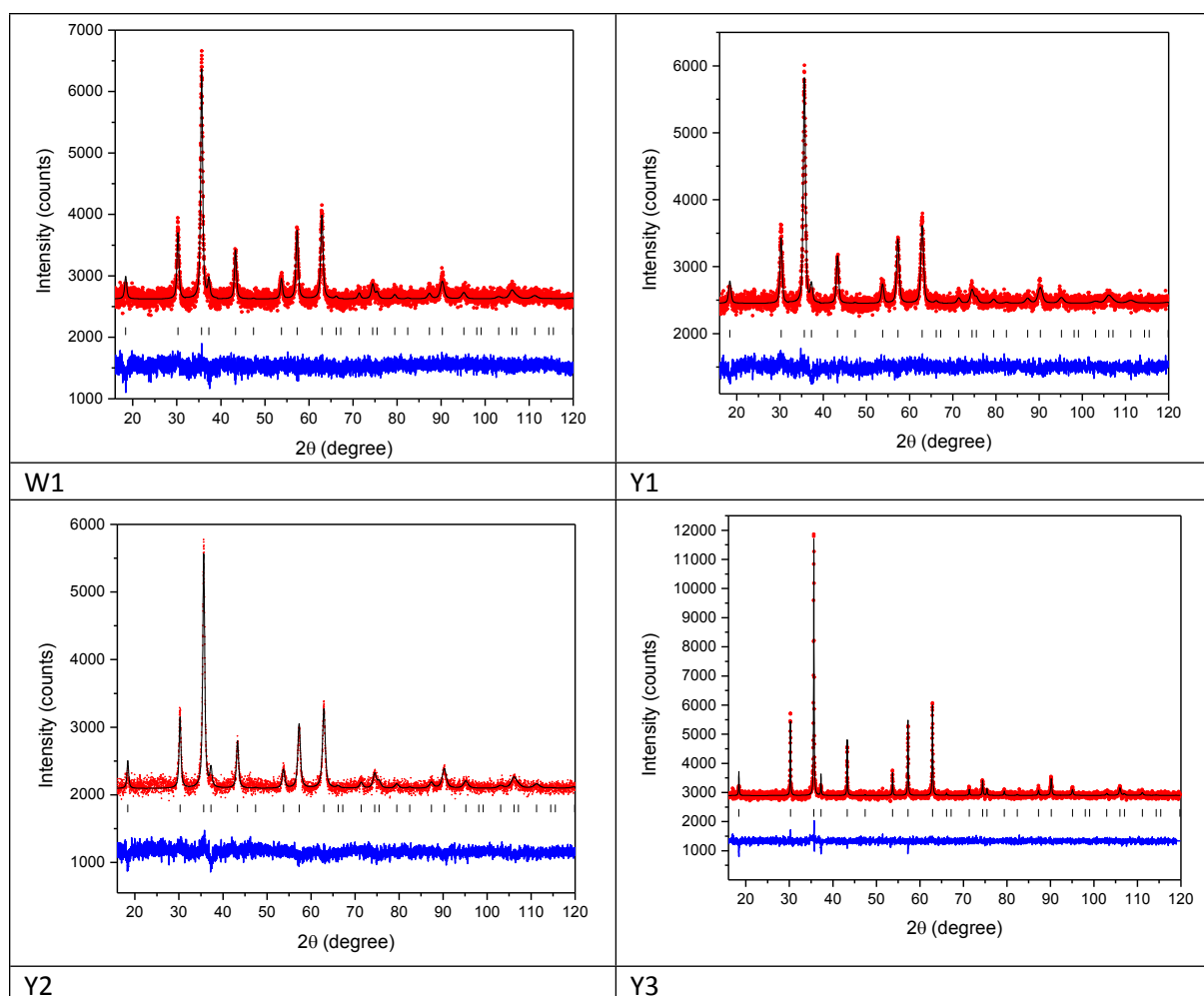
*sikorab@ifpan.edu.pl

Figure S1. X-ray diffraction patterns of the Fe_3O_4 nanoparticles as a function of Y^{3+} cations content with Rietveld method theoretical fitting. Symbols: (•) experimental and (−) fitted diffractograms, (—) differential curve and (|) positions of Bragg reflections are indicated by bars below the diffraction curve.

Table S1. The crystallographic model for F_3O_4 :Y nanoparticles.

Atom name	Atomic positions		
	x	y	z
Fe	0.125	0.125	0.125
Fe/Y	0.5	0.5	0.5
O	0.248(1)	0.248(1)	0.248(1)