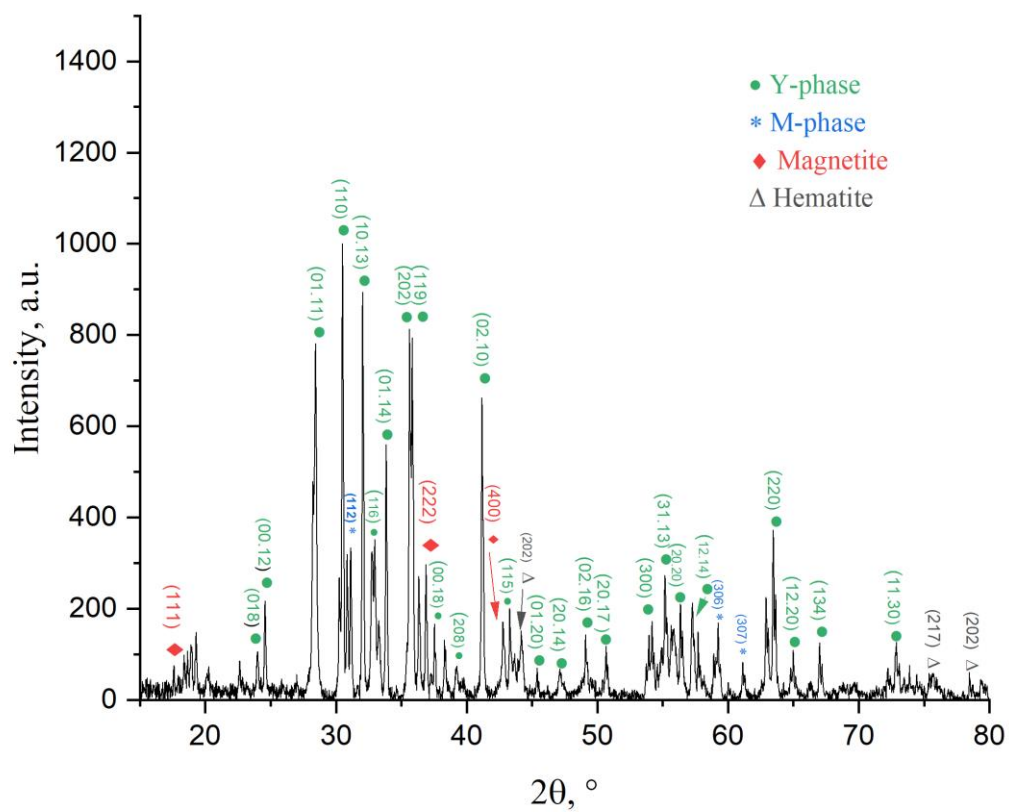


**Figure S1.** X-ray patterns of hexaferrites of the  $\text{Ba}_2\text{Ni}_{2-x}\text{Cu}_x\text{Fe}_{12}\text{O}_{22}$  ( $0 \leq x \leq 2.0$ ) system. The lower part of the figure shows X-ray diffraction patterns of the target Y-phase and impurity phases of M-type hexaferrite, magnetite and hematite.



**Figure S2.** X-ray diffraction pattern of  $\text{Ba}_2\text{Ni}_1\text{Cu}_1\text{Fe}_{12}\text{O}_{22}$  ( $x=1.0$ ) hexaferrite with labeled reflections of the target Y-phase and impurity phases.