\[ \text{ZnFe}_2\text{O}_4 \]
Fig. 1  Scheme of spraying coprecipitation

ZnFe₂O₄  XRD, SEM, TEM  (shimadzu) DTA-50 10°C·min⁻¹
HITACHI X-650

2

ZnFe₂O₄  700°C  6  2
450–560°C  6  2  650°C
700°C
ZnFe₂O₄  XRD  3  4
JCPDS  (JCPDS CARD FILE No. 22–1012)  ZnFe₂O₄  F₃₃₃₃ (227)
Scherrer  [5]  ZnFe₂O₄  D,  40nm  4
Fig. 3 XRD pattern of ZnFe$_2$O$_4$ prepared by coprecipitation

Fig. 4 XRD pattern of ZnFe$_2$O$_4$ prepared by spraying coprecipitation

Fig. 5 SEM and TEM graphs of ZnFe$_2$O$_4$ prepared by coprecipitation
Fig. 6 SEM and TEM graphs of ZnFe$_2$O$_4$ prepared by spraying coprecipitation
The Preparation of Nano ZnFe$_2$O$_4$ by Spraying Coprecipitation and its Structure Analysis

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In this paper ZnFe$_2$O$_4$ nano powders were prepared by improved coprecipitation method, which was called spraying coprecipitation. The XRD, SEM and TEM analysis shows the powder size is below 20nm. It was found that the nano powder shows ferrimagnetic characteristics, which is due to nano size effect. The transportation and reaction of materials in spraying coprecipitation process was discussed by hydrodynamics mechanism. The results demonstrated that spraying coprecipitation can be a new method to prepare nano oxide powders.

Keywords: coprecipitation nano-powder ZnFe$_2$O$_4$