

Supporting information

Multicolour and up-conversion fluorescence of lanthanide doped Vernier phase yttrium oxyfluoride nanocrystals

Ting Wen,^a Wenjiao Luo,^{b, c} Yonggang Wang,^{*b} Miao Zhang,^a Yanzhen Guo,^a Jinyun Yuan,^a Jing Ju,^b Yingxia Wang,^{*b} Fuhui Liao^b and Baocheng Yang^{*a}

^a Institute of Nanostructured Functional Materials, Huanghe Science and Technology College, Zhengzhou, Henan, 450006, China
Fax: +86-10-62753541; Tel: 86-10-62754186; E-mail: yxwang@pku.edu.cn.

^b Beijing National Laboratory for Molecular Sciences, State Key Laboratory for Rare Earth Materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, China

^c School of Materials Sciences and Technology, China University of Geosciences, Beijing, 100190, China

Fig. S1 Reitveld refinement plots of undoped V-YOF and Ln³⁺ doped V-YOF samples based on the PXRD patterns.

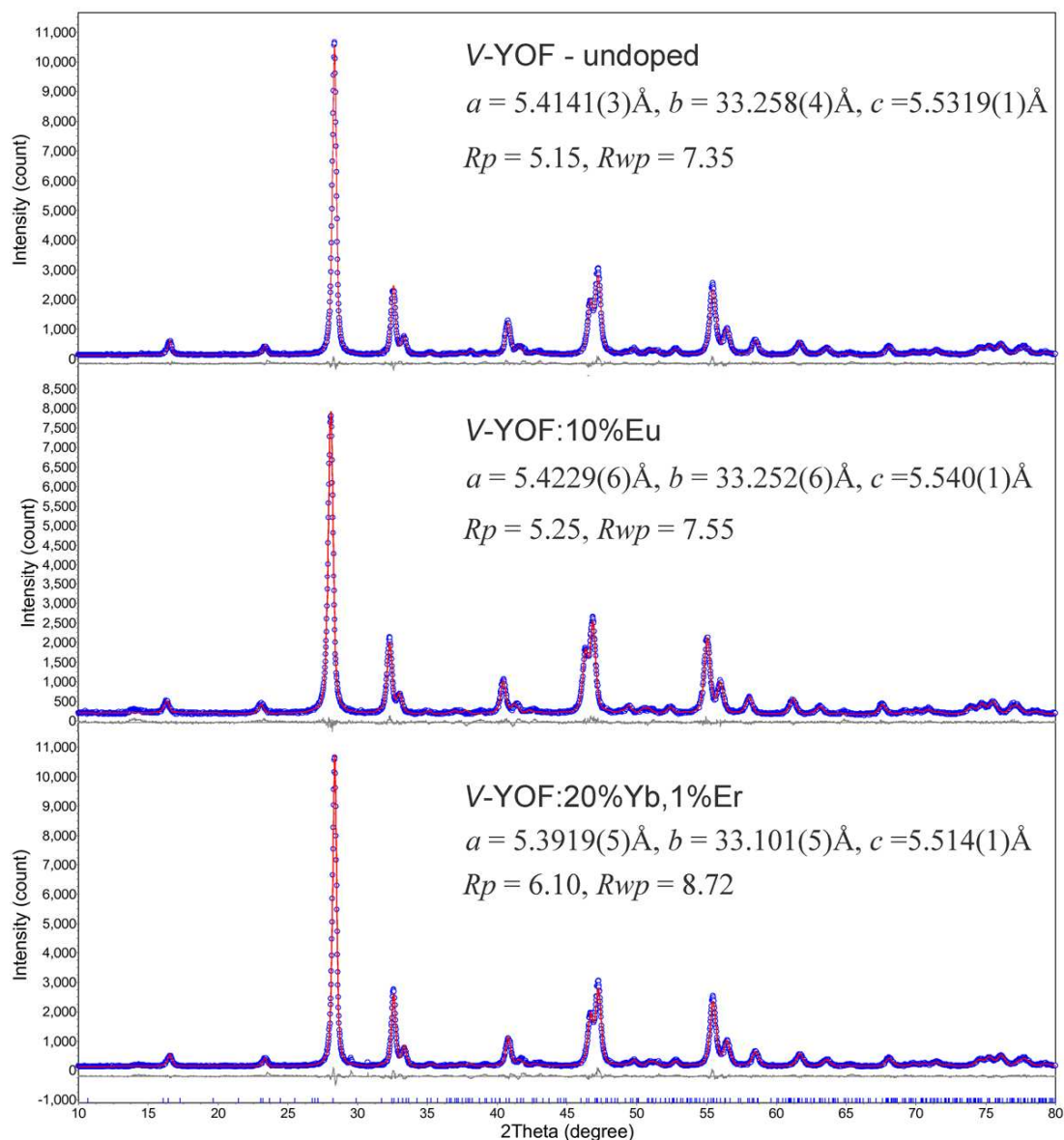


Fig. S3 HRTEM images of *V*-YOF samples annealed at 400 °C.

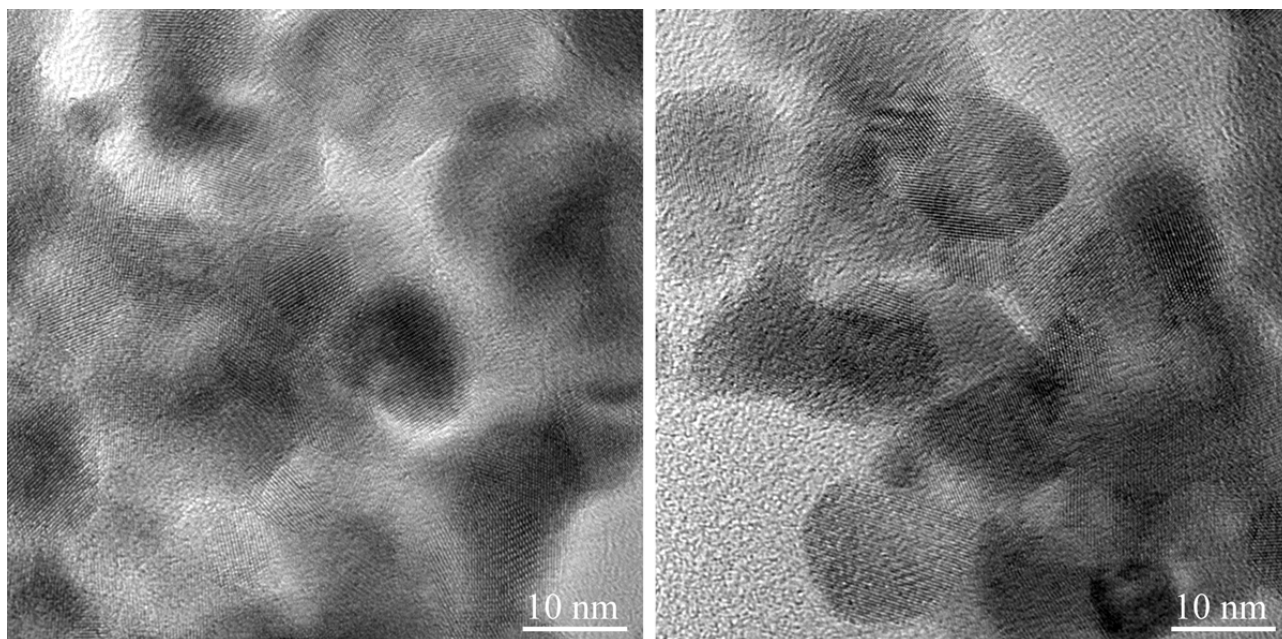


Fig. S3 TEM images of a) the precursor by coprecipitation and *V*-YOF samples annealed at different temperatures: b) 400 °C, c) 600 °C.

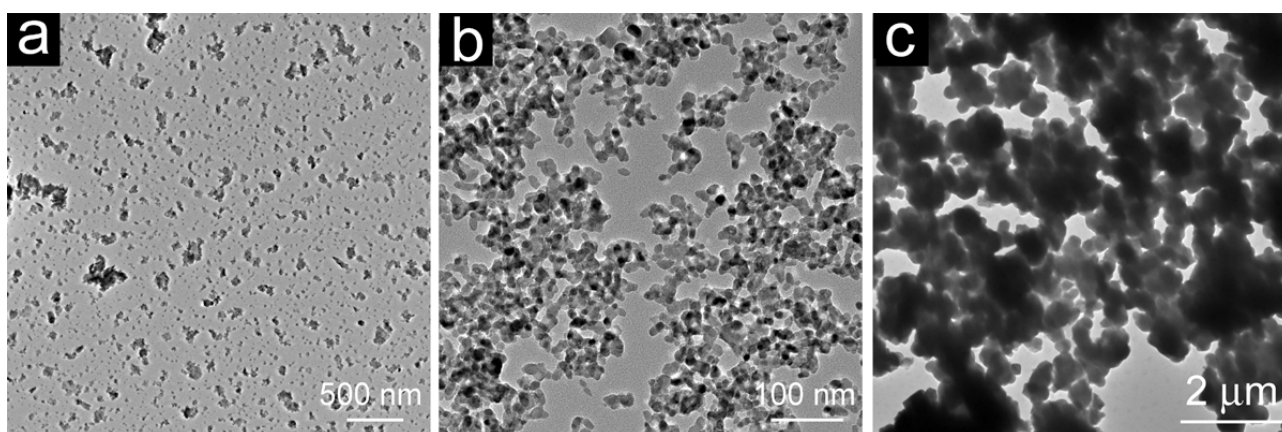


Fig. S4 Elemental distribution of YOF:20%Yb,1%Ho.

