

## Electronic Supplementary Informations

### Title: Investigation on optical temperature sensing behaviour via Ag island-enhanced luminescence doped $\beta$ -NaGdF<sub>4</sub>:Yb<sup>3+</sup>/Tm<sup>3+</sup> films/microfibers

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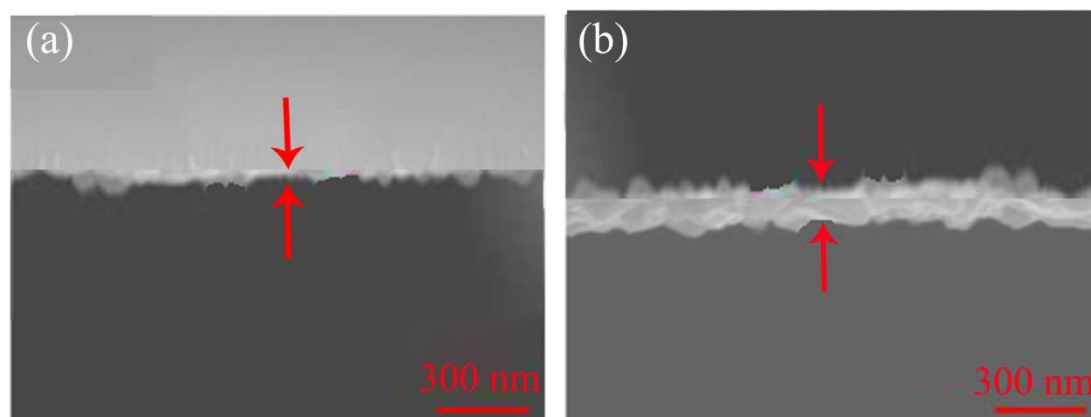
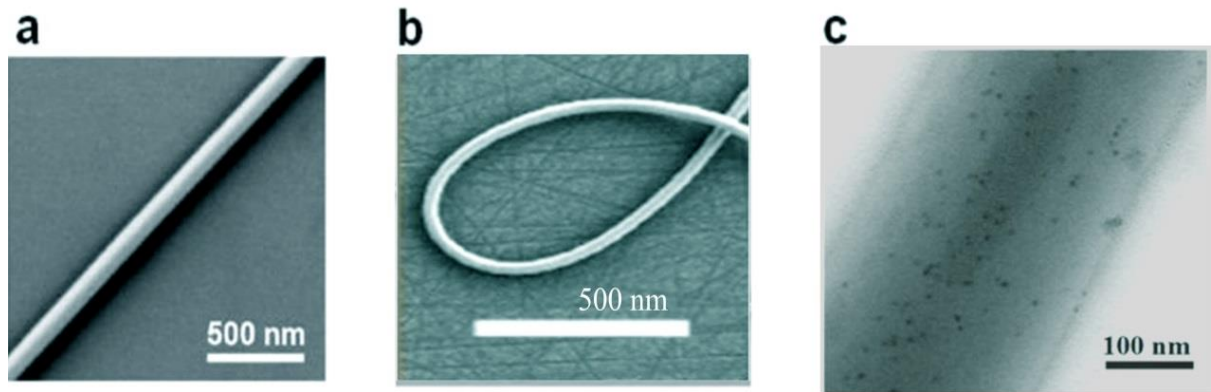


Fig. S1 Characterization of thin film. (a) SEM image of NaGdF<sub>4</sub>:Yb<sup>3+</sup>/Tm<sup>3+</sup>. (b) SEM images of Ag doped NaGdF<sub>4</sub>:Yb<sup>3+</sup>/Tm<sup>3+</sup>



**Fig. S2** Characterization of microfibers. (a) SEM image of microfiber having diameter of 12 μm. (b) SEM images of microfiber with diameter of 11 μm. (c) TEM images of microfiber with diameter of 8 μm.