Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Preferable Forward Energy Transfer in $Tb(C_{12}H_8N_2)_2(NO_3)_3$@$Ca_{0.9}Eu_{0.1}MoO_4$ Hierarchical Porous Composites via Interface

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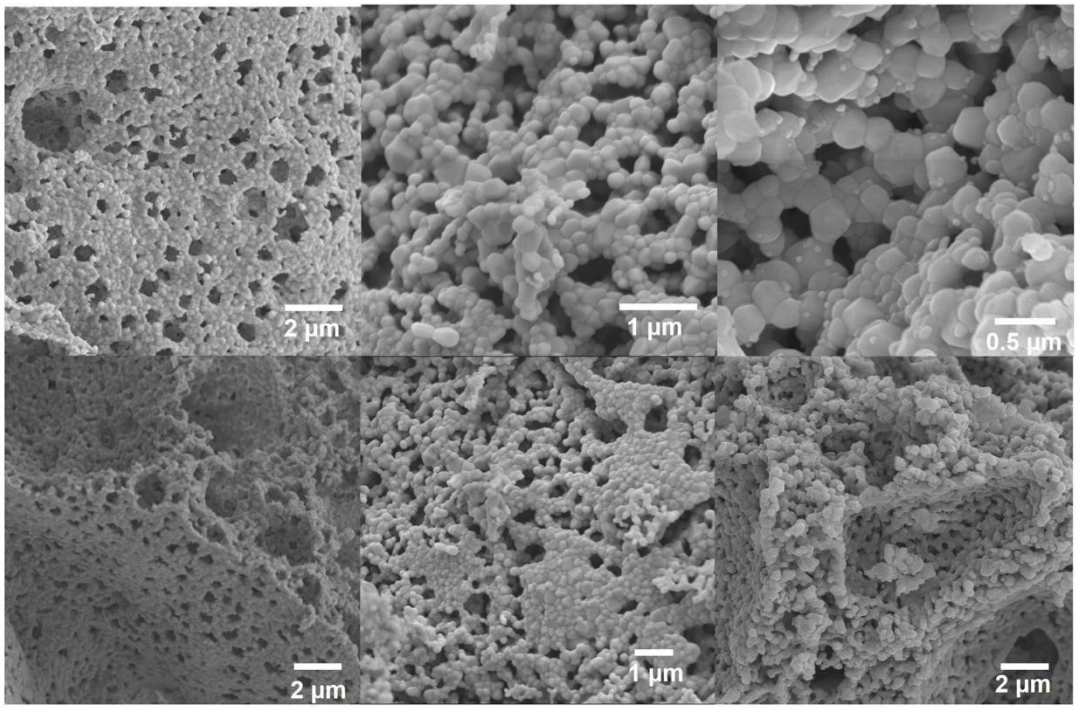

Fig. S1 The SEM images of hierarchical porous CEMO

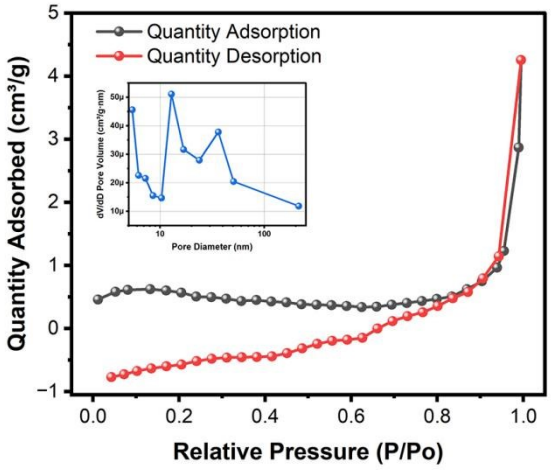

Fig. S2 The Nitrogen adsorptiondesorption isotherms of hierarchical porous CEMO, and the inset is adsorption dV/dD pore volume of the pore diameter

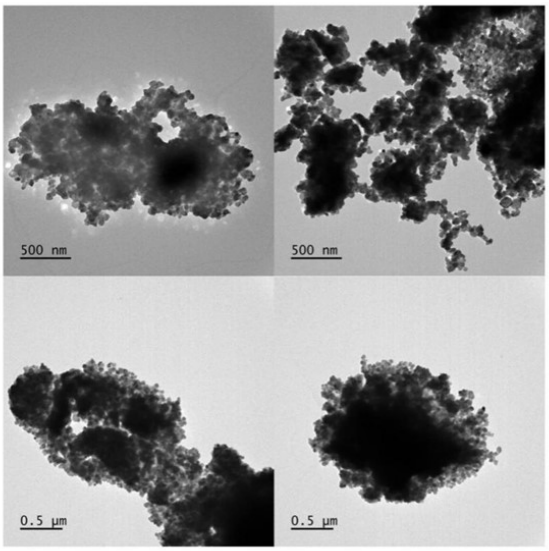

Fig. S3 The TEM images of Tb-phen@CEMO composites

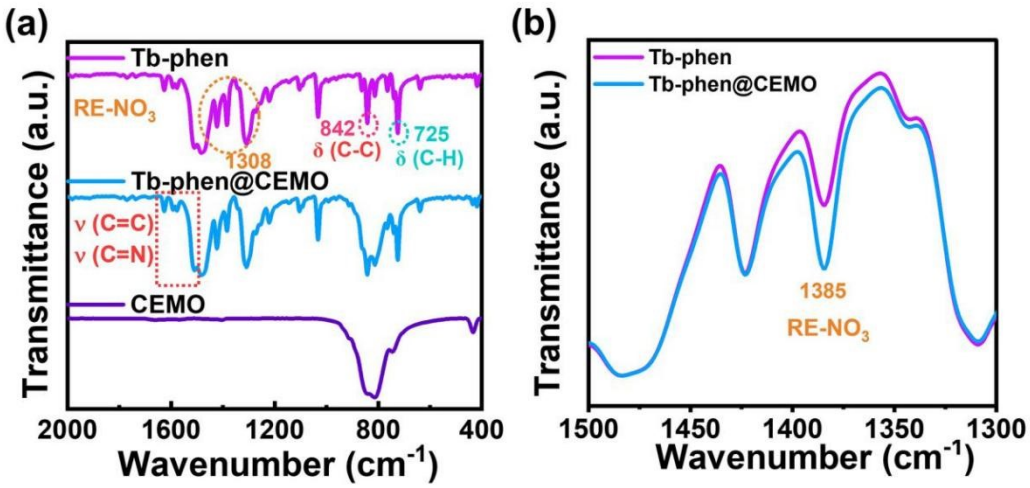

Fig. S4 FT-IR spectra of CEMO, Tb-phen, and Tb-phen@CEMO composites

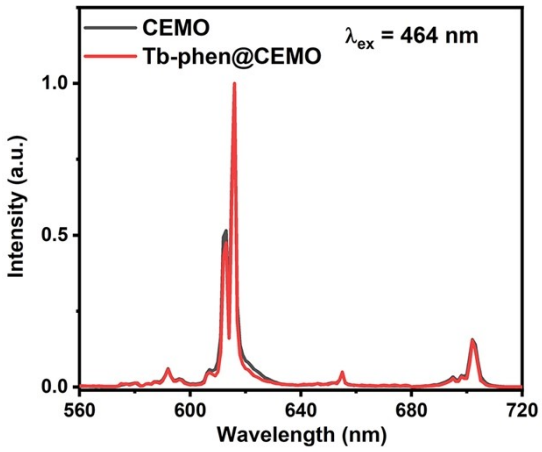

Fig. S5 The emission spectrum of CEMO and Tb(phen)@CEMO composites

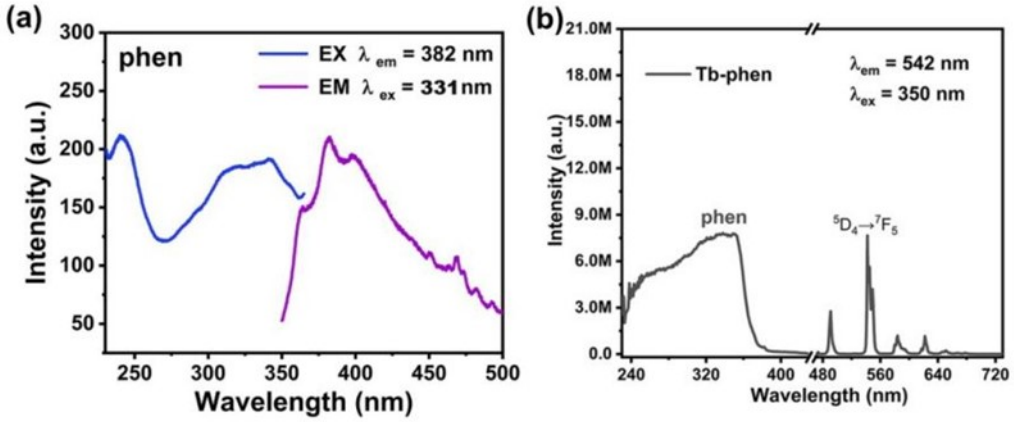

Fig. S6 (a) The excitation spectra and emission spectra of (a) phen (λ_{em}= 382 nm, λ_{ex}= 331 nm); (b) Tb-phen (λ_{em}= 542 nm, λ_{ex}= 350 nm)

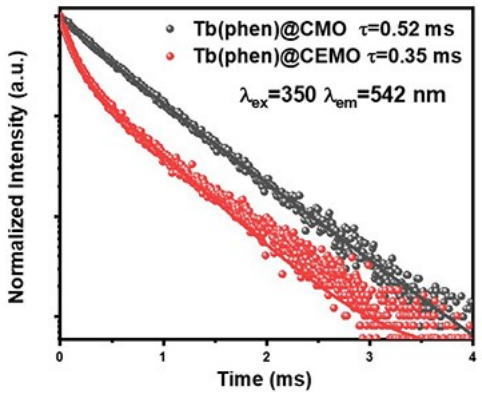

Fig. S7 The decay curves of Tb-phen@CMO and Tb-phen@CEMO composites

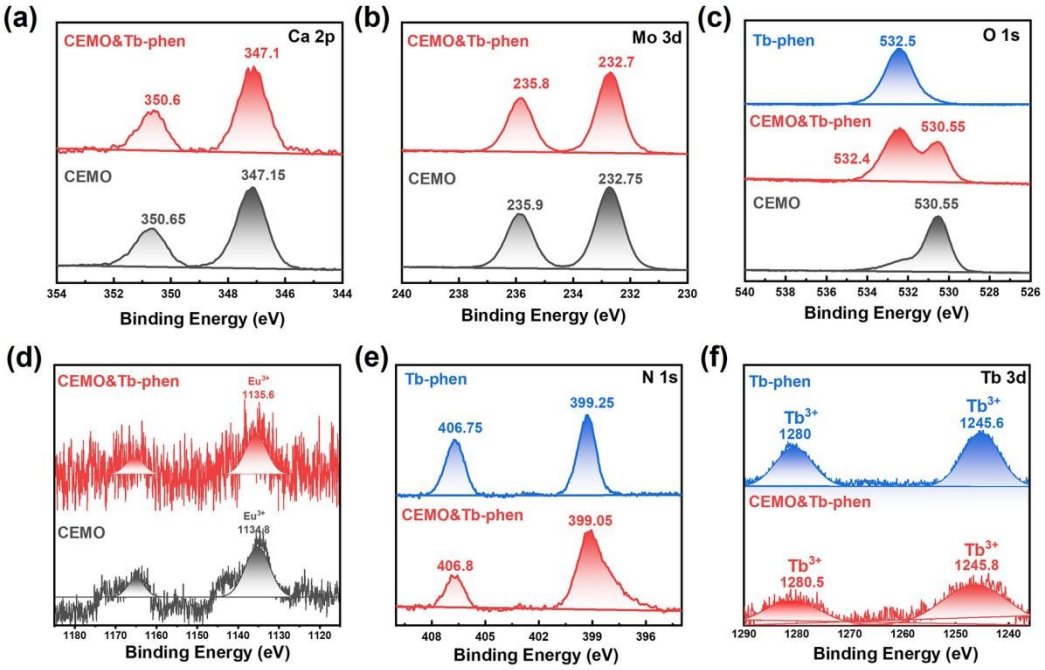

Fig. S8 XPS of (a) Ca 2*p*, (b) Mo 3*d*, (c) Eu 3*d,* (d)Tb 3*d*, (e) N 1*s*, (f) O 1*s* of micron CEMO, Tb-phen and CEMO&Tb-phen composites, Spectra calibrated by C 1*s* peak at 284.8 eV

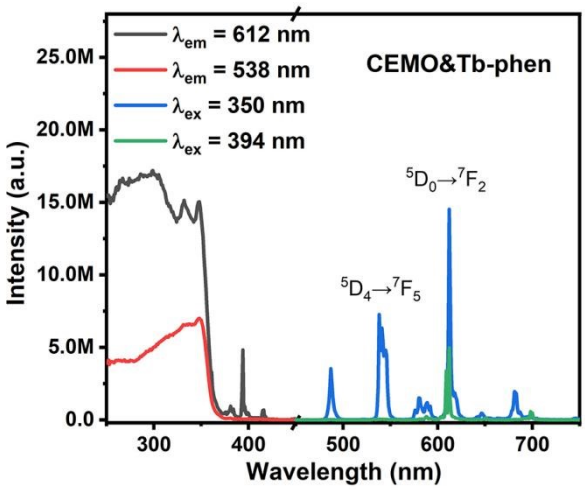

Fig. S9 The excitation and emission spectrum of CEMO&Tb-phen composites

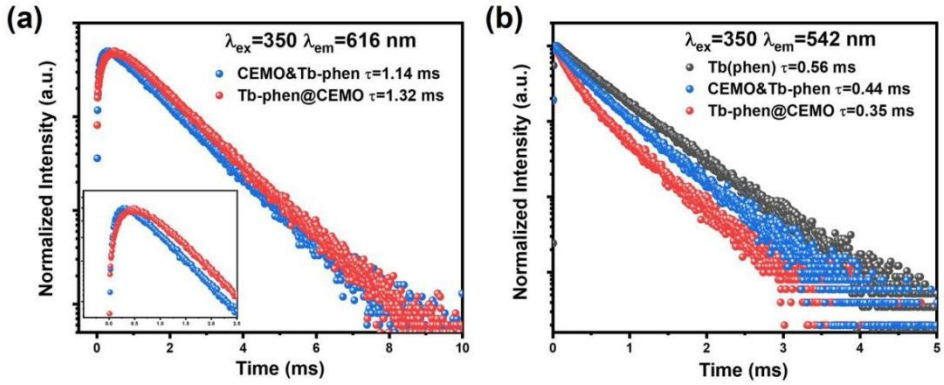

Fig. S10 The decay curves of Tb(phen), CEMO&Tb-phen composites and Tb-phen@CEMO composites

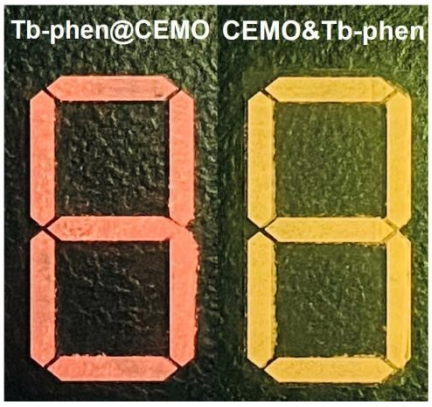

Fig. S11 The fluorescence images of Tb-phen@CEMO and CEMO&Tb-phen composites under 365 nm UV light irradiation

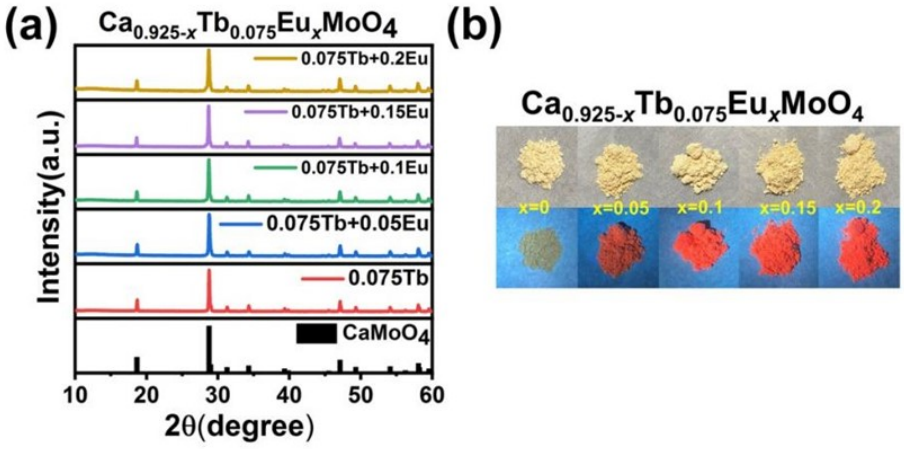

Fig. S12 (a) The XRD of $Ca_{0.925-x}Tb_{0.075}Eu_xMoO_4$ powder samples; (b) The photographs of $Ca_{0.925-x}Tb_{0.075}Eu_xMoO_4$ materials under the daylight lamp and UV 365 nm lamp

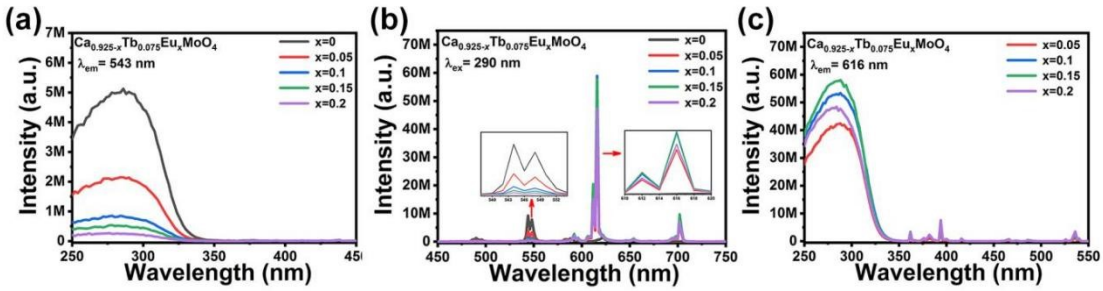

Fig. S13 The excitation spectra and emission spectra of $Ca_{0.925-x}Tb_{0.075}Eu_xMoO_4$ (a) λ_{em}=543 nm; (b) λ_{ex}=290 nm; (c) λ_{em}=616 nm

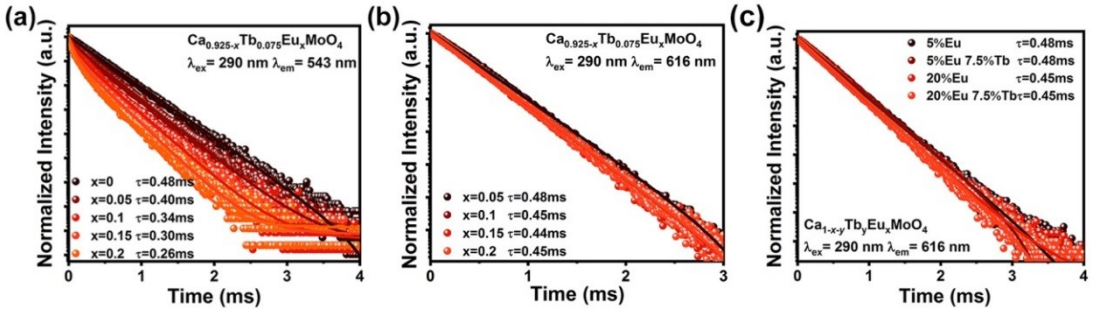

Fig. S14 The decay curves of $Ca_{0.925-x}Tb_{0.075}Eu_xMoO_4$ (a) λ_{ex}=290 nm, λ_{em}=543 nm; (b) λ_{ex}=290 nm, λ_{em}=616 nm; (c) The decay curves of $Ca_{1-x-y}Tb_yEu_xMoO_4$: λ_{ex}=290 nm, λ_{em}=616

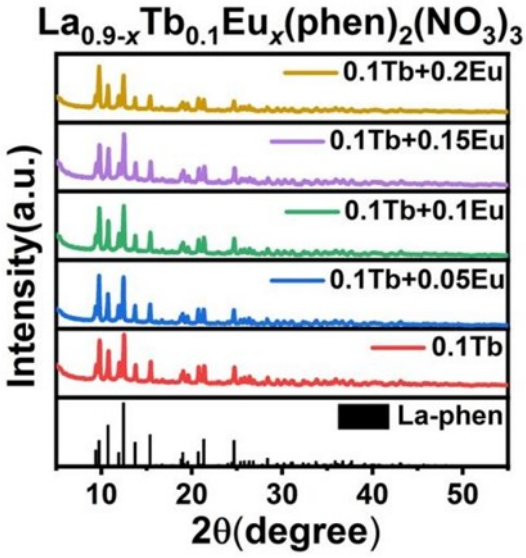

Fig. S15 The XRD of $La_{0.9-x}Tb_{0.1}Eu_x(phen)_2(NO_3)_3$ powder materials

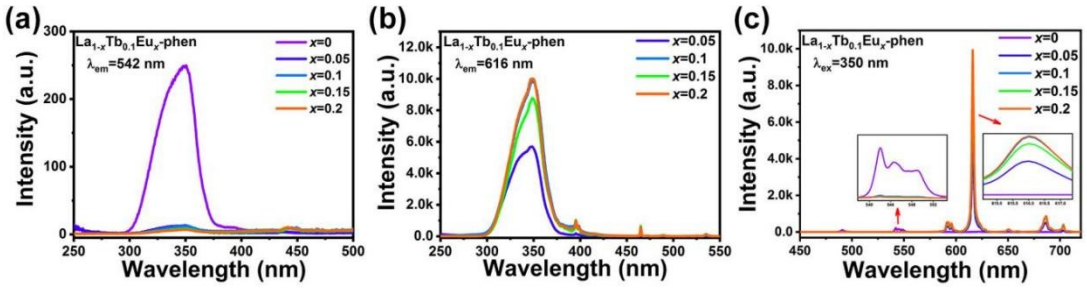

Fig. S16 The excitation spectra and emission spectra of $La_{1-x}Tb_{0.1}Eu_x$-phen (a) λ_{em}=542 nm; (b) λ_{em}=616 nm; (c) λ_{ex}=350 nm

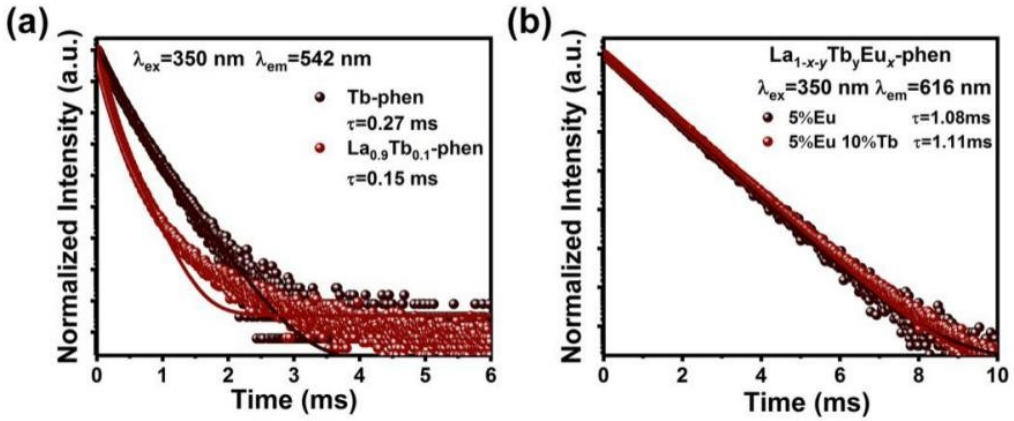

Fig. S17 (a) The decay curves of Tb-phen and $La_{0.9}$Tb-phen λ_{ex}=350 nm, λ_{em}=543 nm; (b) The decay curves of $La_{1-x-y}Tb_yEu_x$-phen λ_{ex}=350 nm, λ_{em}=616 nm