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

Efficient Pink Luminescent Eu(III) Coordination Polymer Excited on Blue LED Chip

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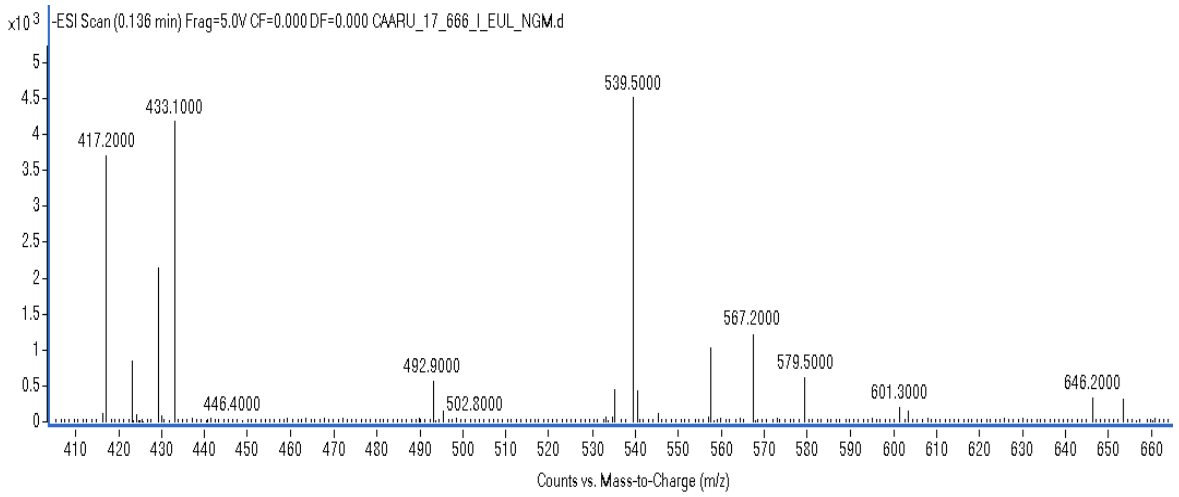
(a)



(b)

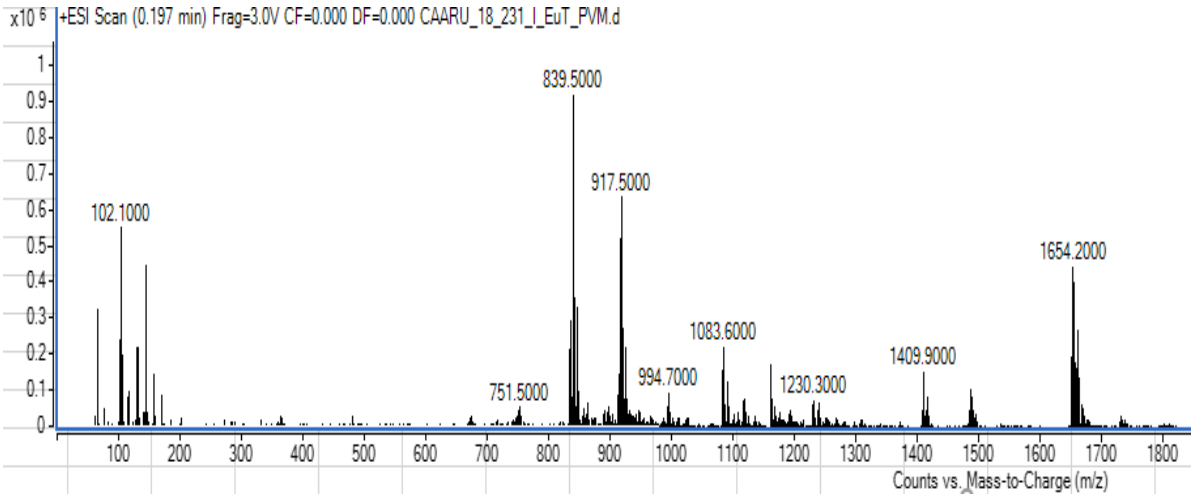
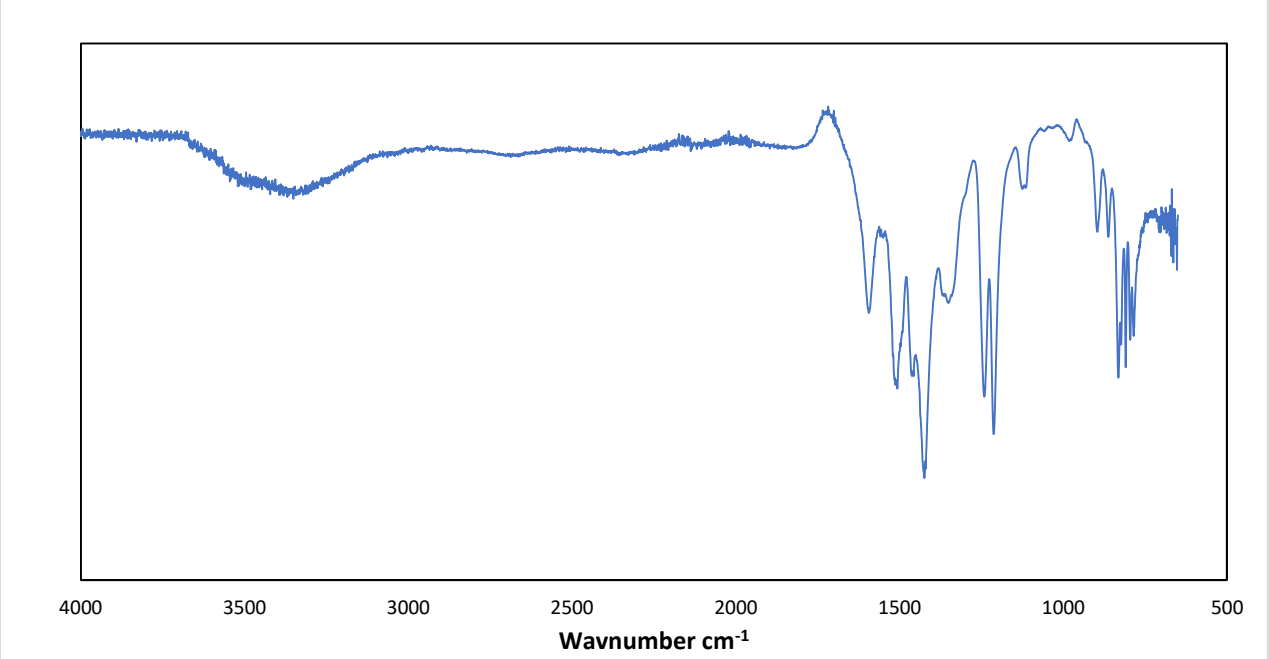


Figure S1: ESI-Mass spectra of (a) **Eu1** and (b) **Eu2** polymers.

(a)



(b)

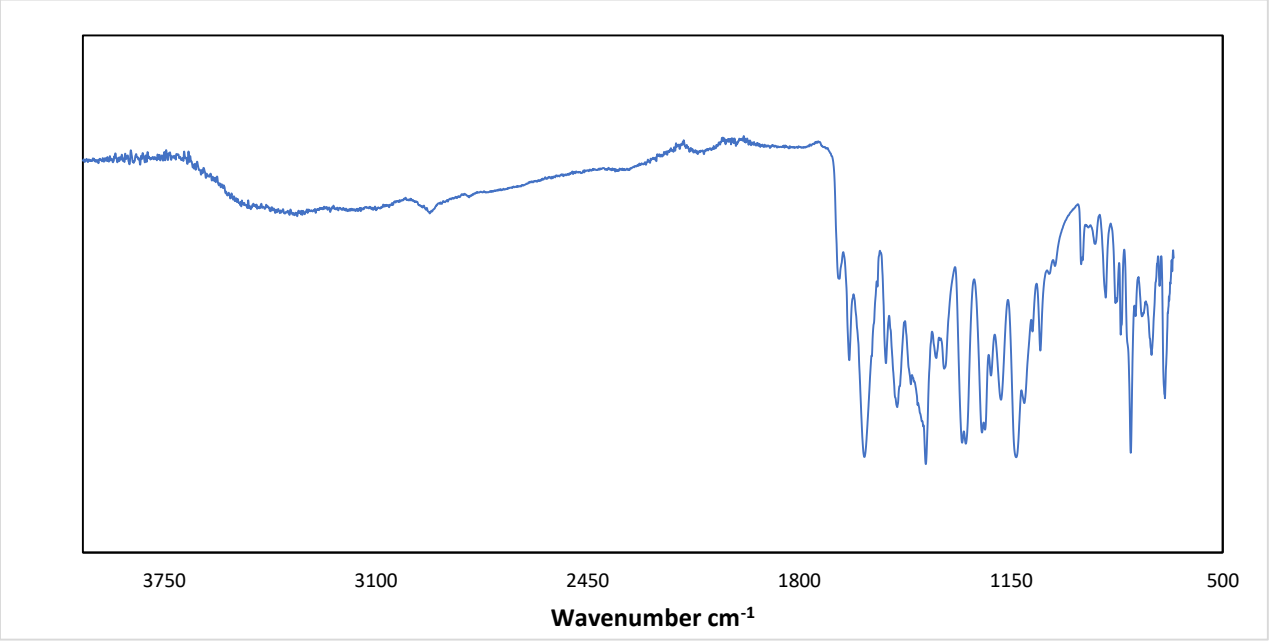


Figure S2: The solid-state FTIR Spectra of (a) **Eu1** and (b) **Eu2** polymers.

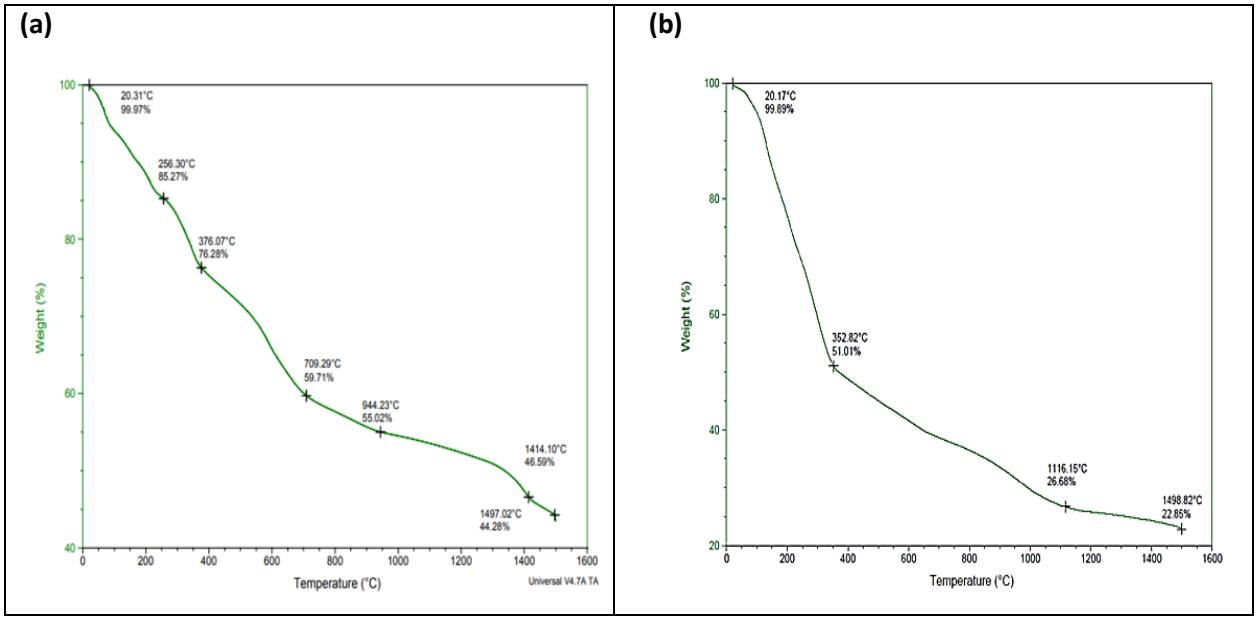


Figure S3: TGA curves of (a) **Eu1** and (b) **Eu2** recorded under an inert atmosphere of N_2.

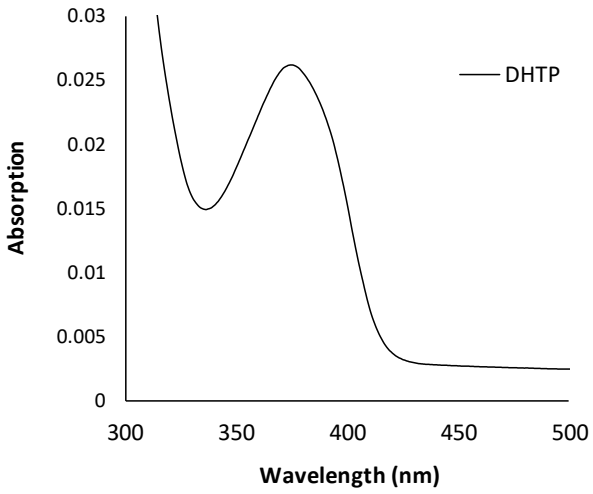


Figure S4: The UV/Vis absorption spectrum of DHTP in THF (1 x10^{-5} M) at 298 K.

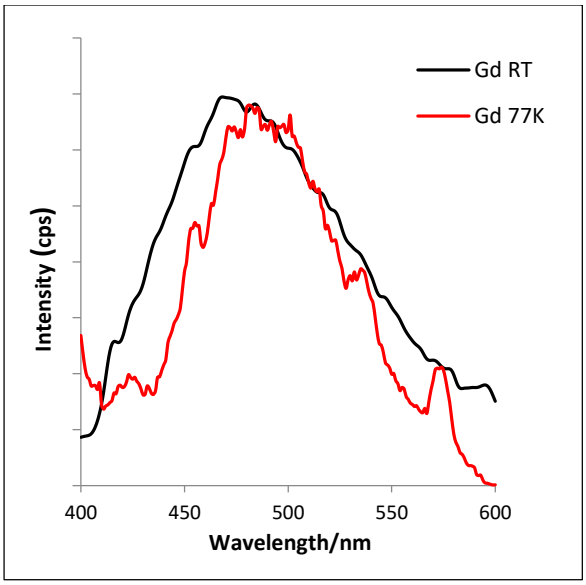
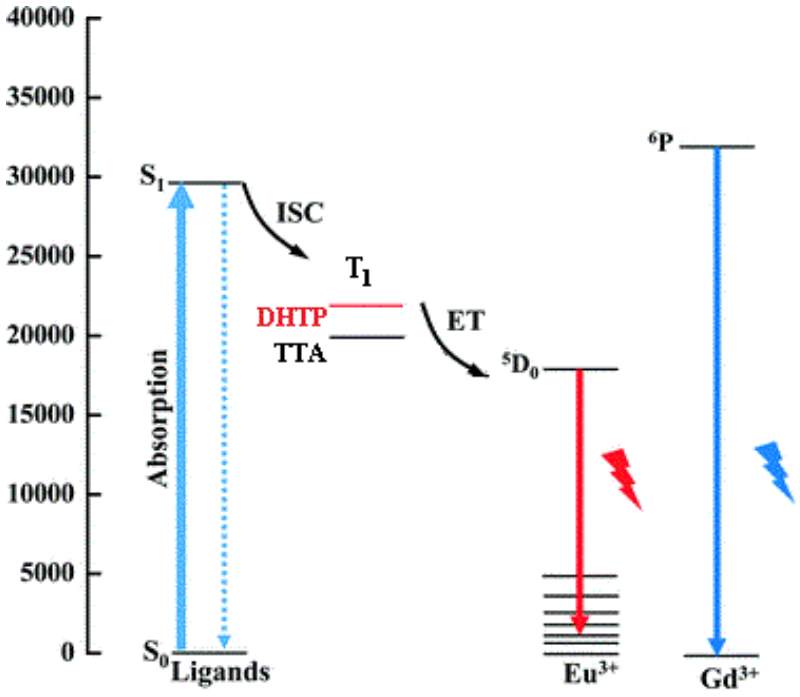


Figure S5: The luminescence Spectre of **Gd1 CP** in ethanol (1 x10^{-5} M) at 300 K and 77 K.



Scheme S6: Representation of the energy transfer pathways from DHTP and TTA to the Eu(III) and Gd(III) centres.

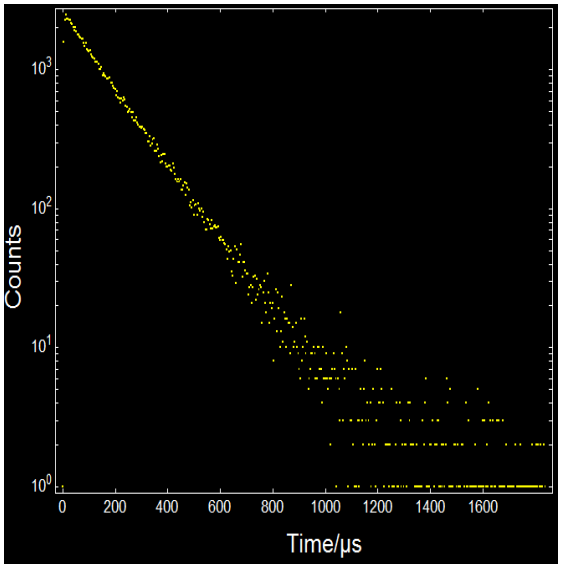


Figure S7: The luminesce decay of Eu(III) in **Eu2** CP in the solid state at RT.

Figure S8: Right: the **Eu2**/InGaN chip device under a UV lamp.

Comments on Checkcif alerts

Eu1

Alert level A

PLAT971_ALERT_2_A Check Calcd Resid. Dens. 0.67 Ang From Eu1… 4.12 eA^{-3}
PLAT973_ALERT_2_A Check Calcd Positive Resid. Density on Eu1… 2.44 eA^{-3}
Response: The high residual densities could be caused by un-efficient absorption corrections.

Alert level B

PLAT112_ALERT_2_B ADDSYM Detects New (Pseudo) Symm. Elem. m 100 %Fit
PLAT112_ALERT_2_B ADDSYM Detects New (Pseudo) Symm. Elem. n 100 %Fit
PLAT113_ALERT_2_B ADDSYM Suggests Possible Pseudo/New Space Group Pnma Check
Response: The ADDSYM alert is false. The structure could not be solved in Pnma.

PLAT213_ALERT_2_B Atom C6 has ADP max/min Ratio ..... 4.6 prolat

PLAT306_ALERT_2_B Isolated Oxygen Atom (H-atoms Missing ?) ..... O1W Check
PLAT306_ALERT_2_B Isolated Oxygen Atom (H-atoms Missing ?) ..... O2W Check
Response: Hydrogen atoms to water molecules were not added to keep the refinement stable.

PLAT430_ALERT_2_B Short Inter D...A Contact O1W ..O7 . 2.78 Ang. x,1/2-y,-1/2+z = 4_565 Check
PLAT430_ALERT_2_B Short Inter D...A Contact O2W ..O5 . 2.78 Ang. x,y,z = 1_555 Check
Response: The water molecules coordinating to the Eu(III) centre are disordered by two positions.

PLAT934_ALERT_3_B Number of (Iobs-Icalc)/Sigma(W) > 10 Outliers .. 4 Check
Response:

PLAT971_ALERT_2_B Check Calcd Resid. Dens. 0.73Ang From Eu1 3.46 eA-3
PLAT971_ALERT_2_B Check Calcd Resid. Dens. 0.98Ang From O10 2.96 eA-3
PLAT976_ALERT_2_B Check Calcd Resid. Dens. 0.75Ang From O2 . -1.66 eA-3
Response: The high residual densities could be caused by un-efficient absorption corrections.

Eu2

Alert level B

PLAT201_ALERT_2_B Isotropic non-H Atoms in Main Residue(s) ..... 1 Report
C22B
Response: Due to disorder of C22 in TTA units. The atom was refined isotropically.

PLAT220_ALERT_2_B NonSolvent Resd 1 C Ueq(max) / Ueq(min) Range 6.9 Ratio
Response: This is unremarkable for the structure where significant disorder in the TTA units.

PLAT230_ALERT_2_B Hirshfeld Test Diff for S1 --C9 . 7.3 s.u.
Response: Due to disorder in the fluorine atom in TTA. This does not indicate an incorrect atom-type assignment.