

Highly selective detection of nitrotoluene based on novel lanthanide-containing ionic liquids

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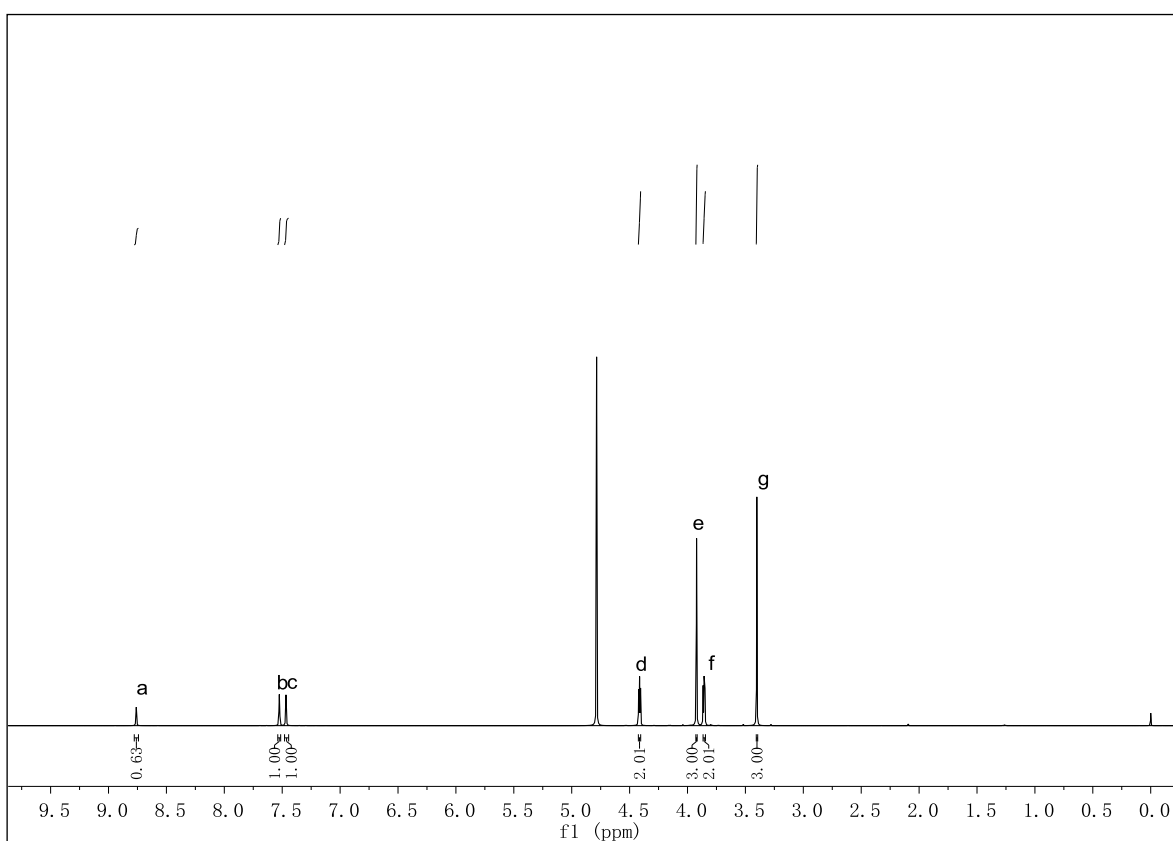


Fig. S1 ¹H NMR spectrum δ H (600 MHz, CD₃OD) of [MOEMIm]Br.

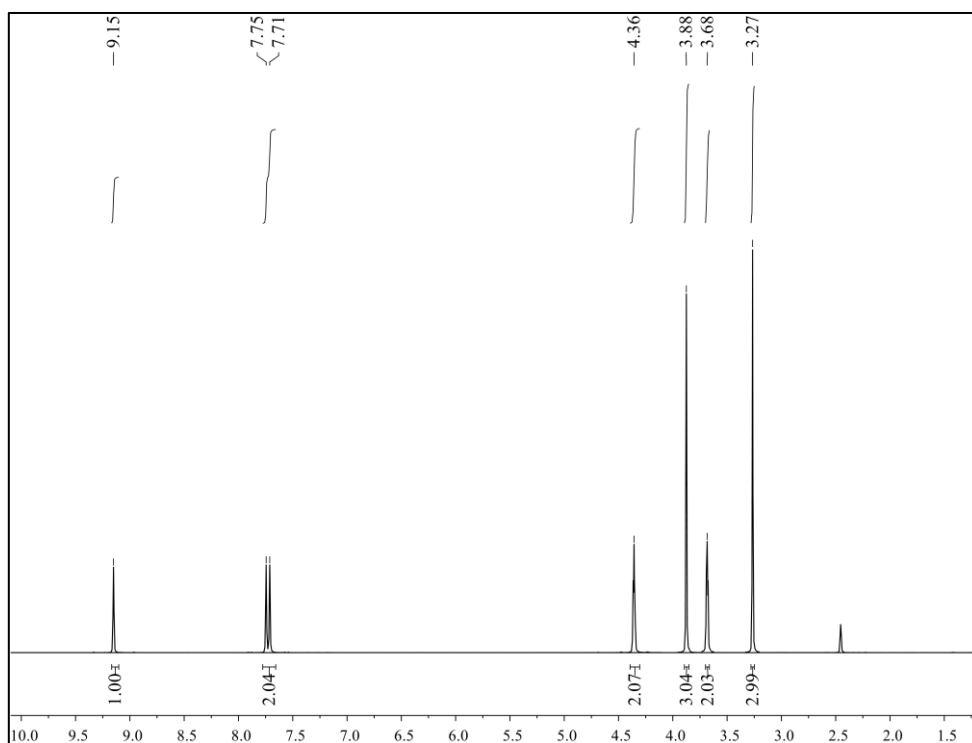


Fig. S2 ^1H NMR spectrum δH (600 MHz, DMSO) of $[\text{MOEMIm}][\text{Eu}(\text{NO}_3)_4]$.

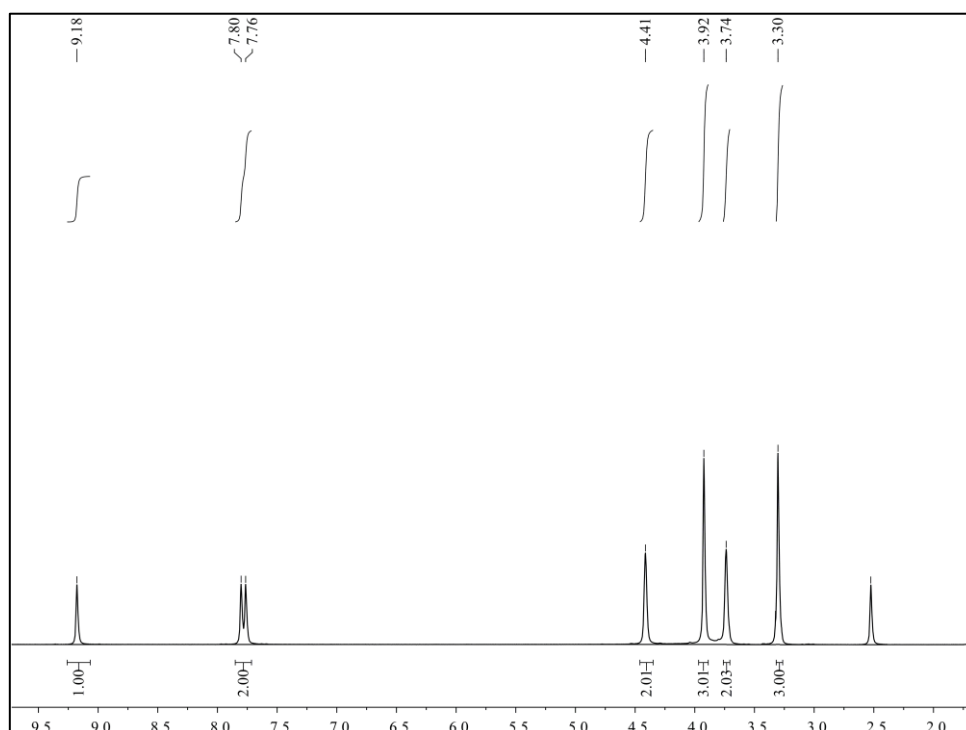


Fig. S3 ^1H NMR spectrum δH (600 MHz, DMSO) of $[\text{MOEMIm}][\text{Dy}(\text{NO}_3)_4]$.

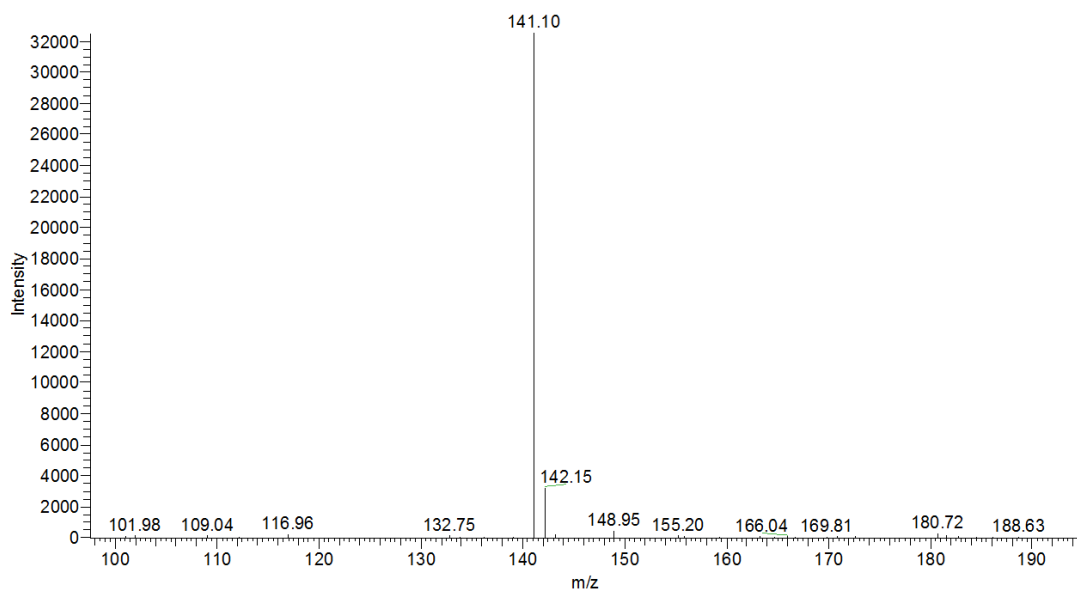


Fig. S4 The cationic MS of [MOEMIm][Eu(NO₃)₄].

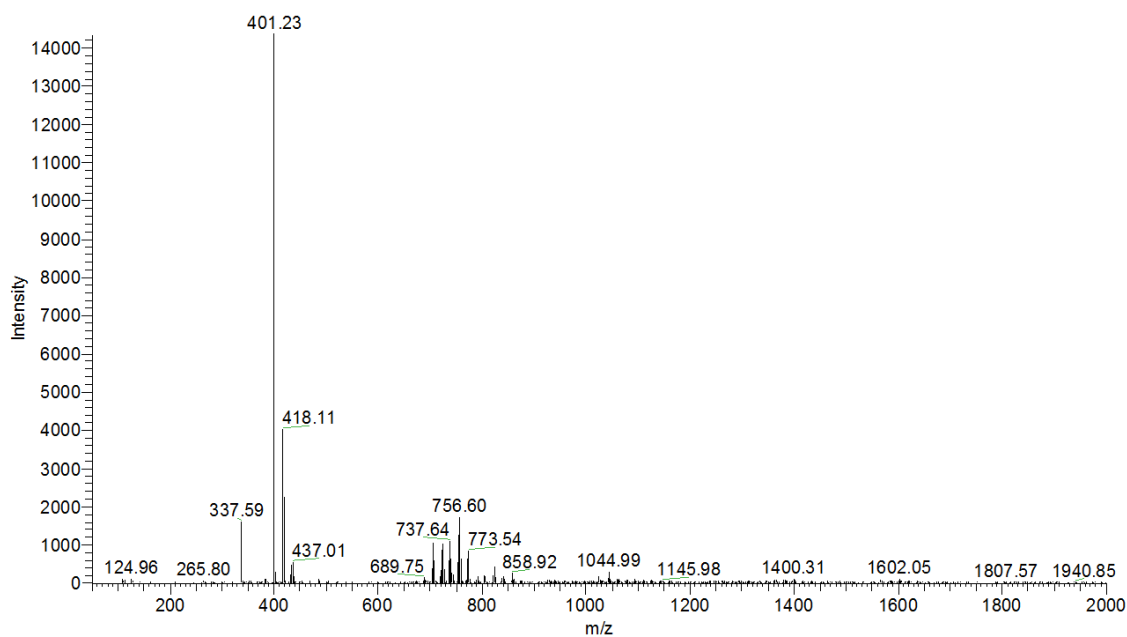


Fig. S5 The anionic MS of [MOEMIm][Eu(NO₃)₄].

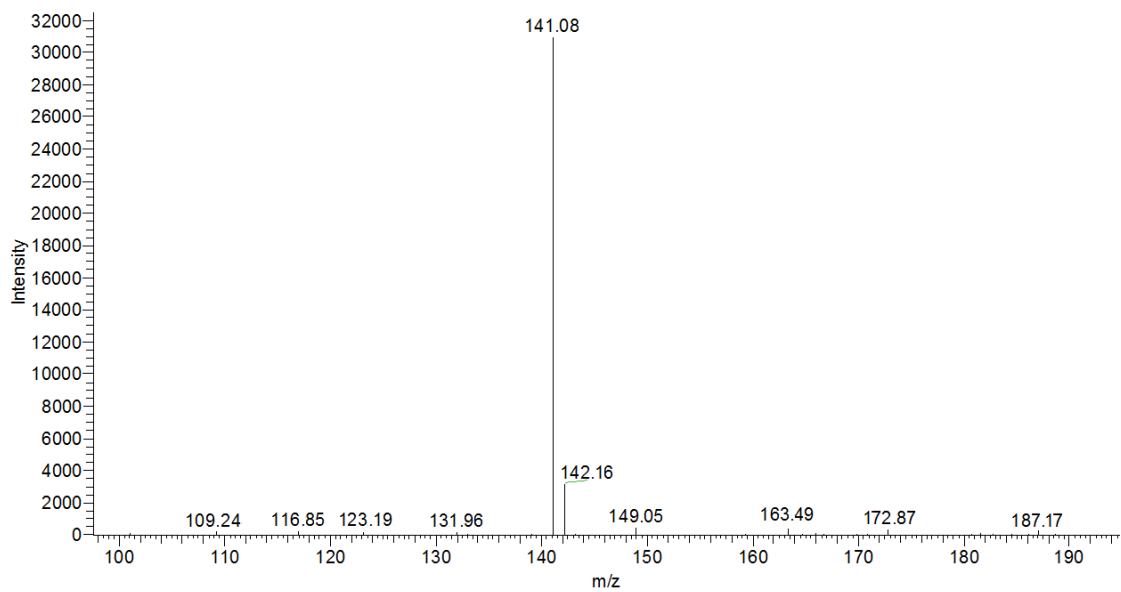


Fig. S6 The cationic MS of [MOEMIm][Dy(NO₃)₄].

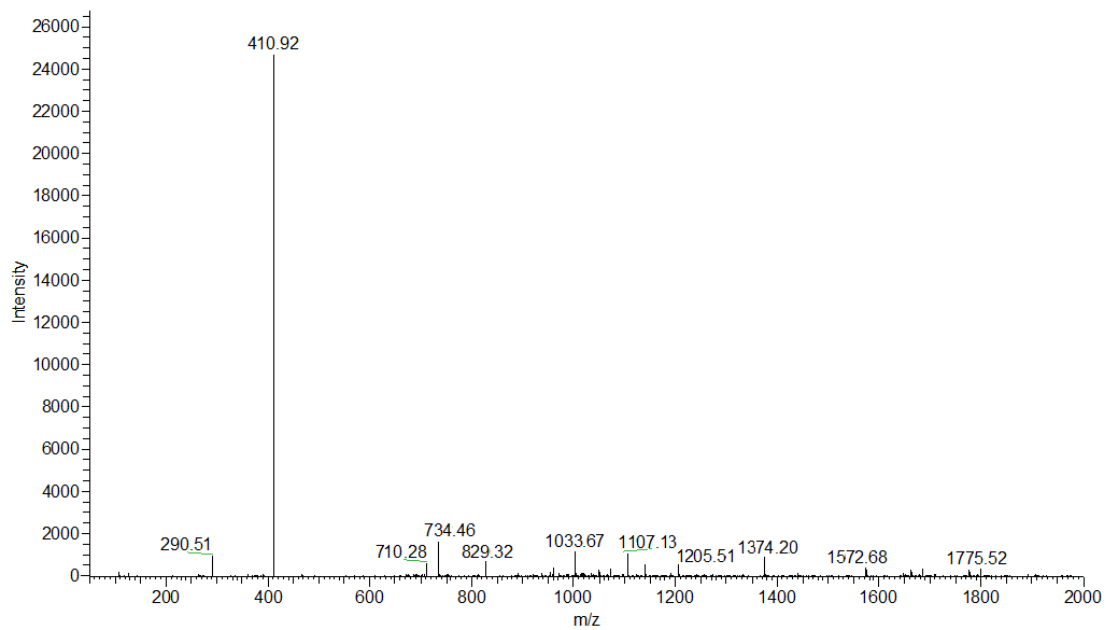


Fig. S7 The anionic MS of [MOEMIm][Dy(NO₃)₄].

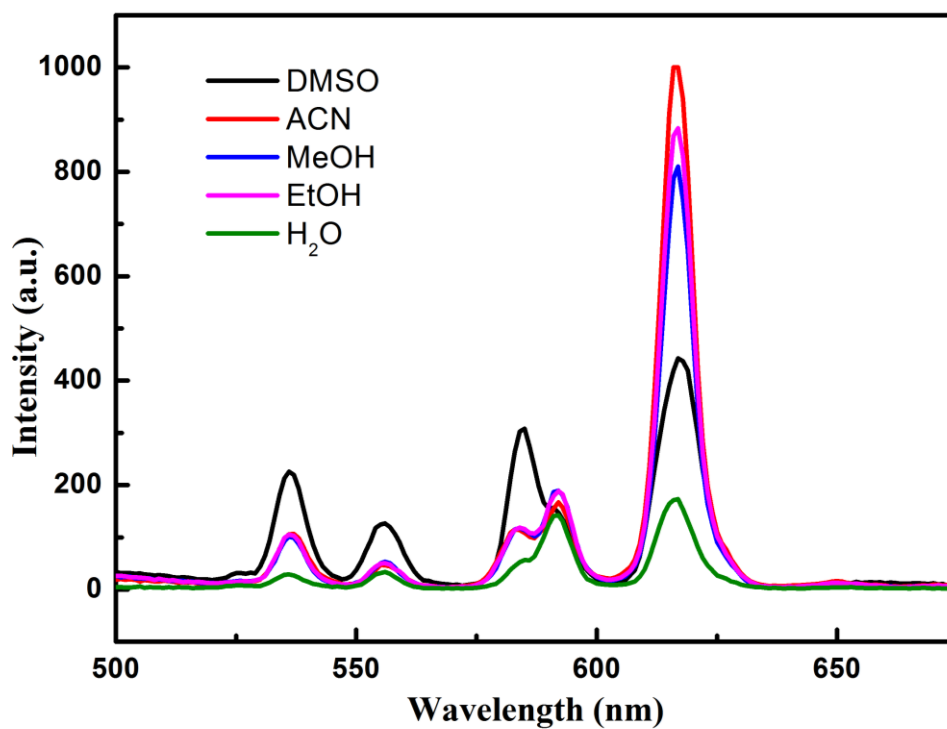


Fig. S8 The emission spectra of [MOEMIm][Eu(NO₃)₄] in the solvents of EtOH, DMSO, ACN, MeOH, H₂O.

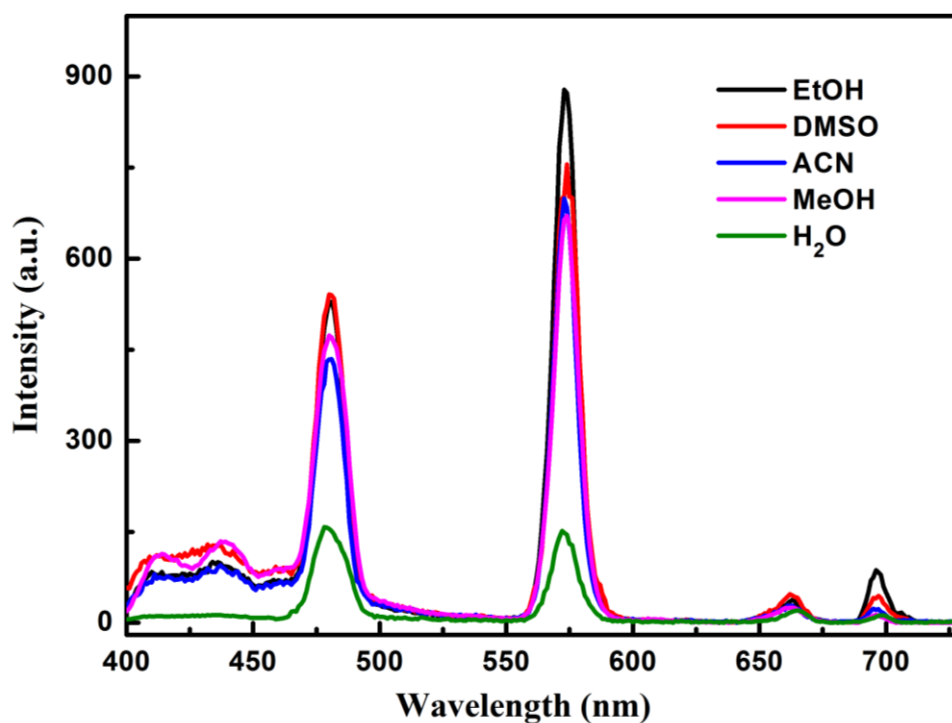


Fig. S9 The emission spectra of [MOEMIm][Dy(NO₃)₄] in the solvents of EtOH, DMSO, ACN, MeOH, H₂O.

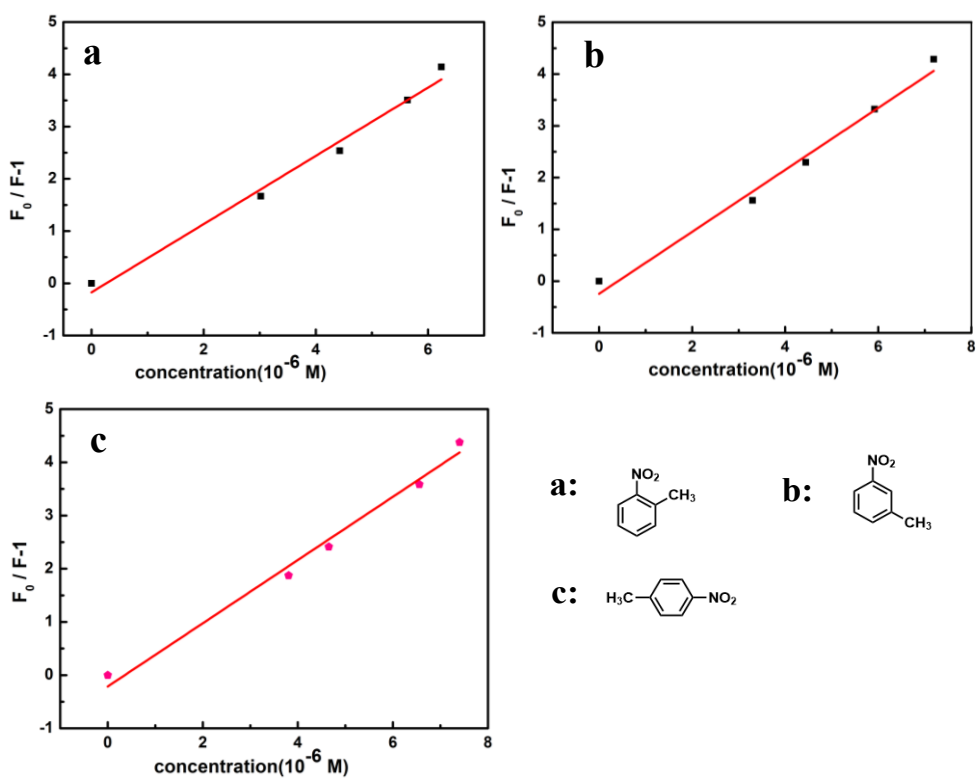


Fig. S10 Plot of $F_0/F-1$ vs. concentration [Q] of *o*-(*m*-, *p*-)nitrotoluene for IL [MOEMIm][Eu(NO₃)₄].

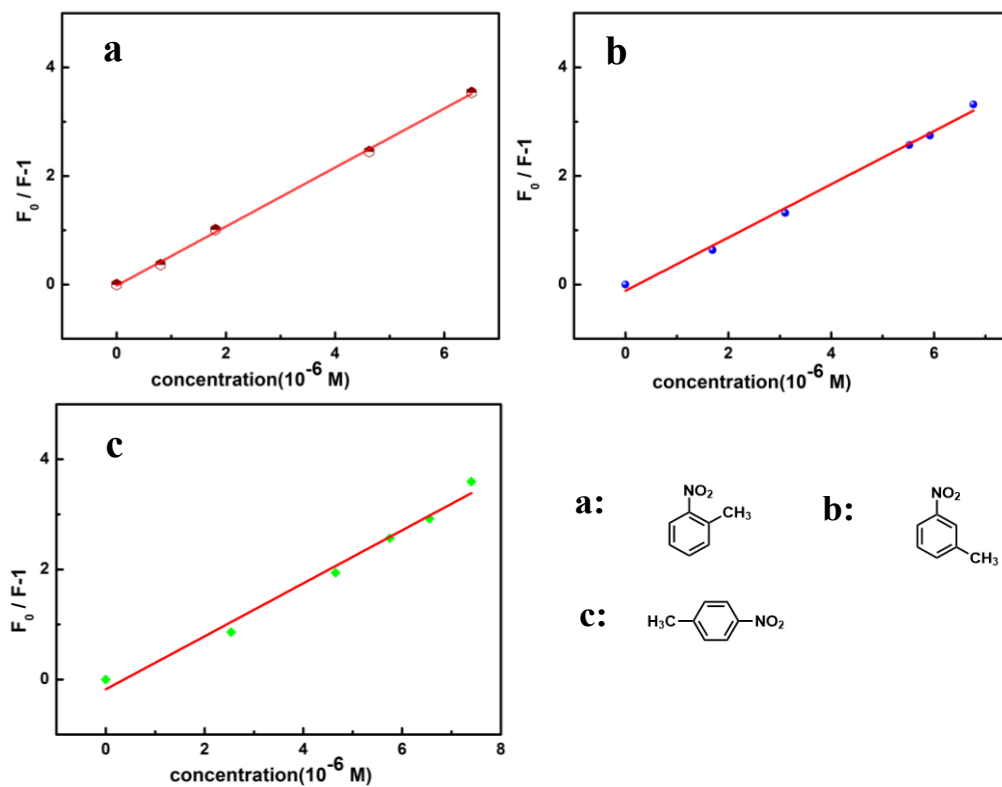


Fig. S11 Plot of $F_0/F-1$ vs. concentration [Q] of *o*-(*m*-, *p*-)nitrotoluene for IL [MOEMIm][Dy(NO₃)₄].

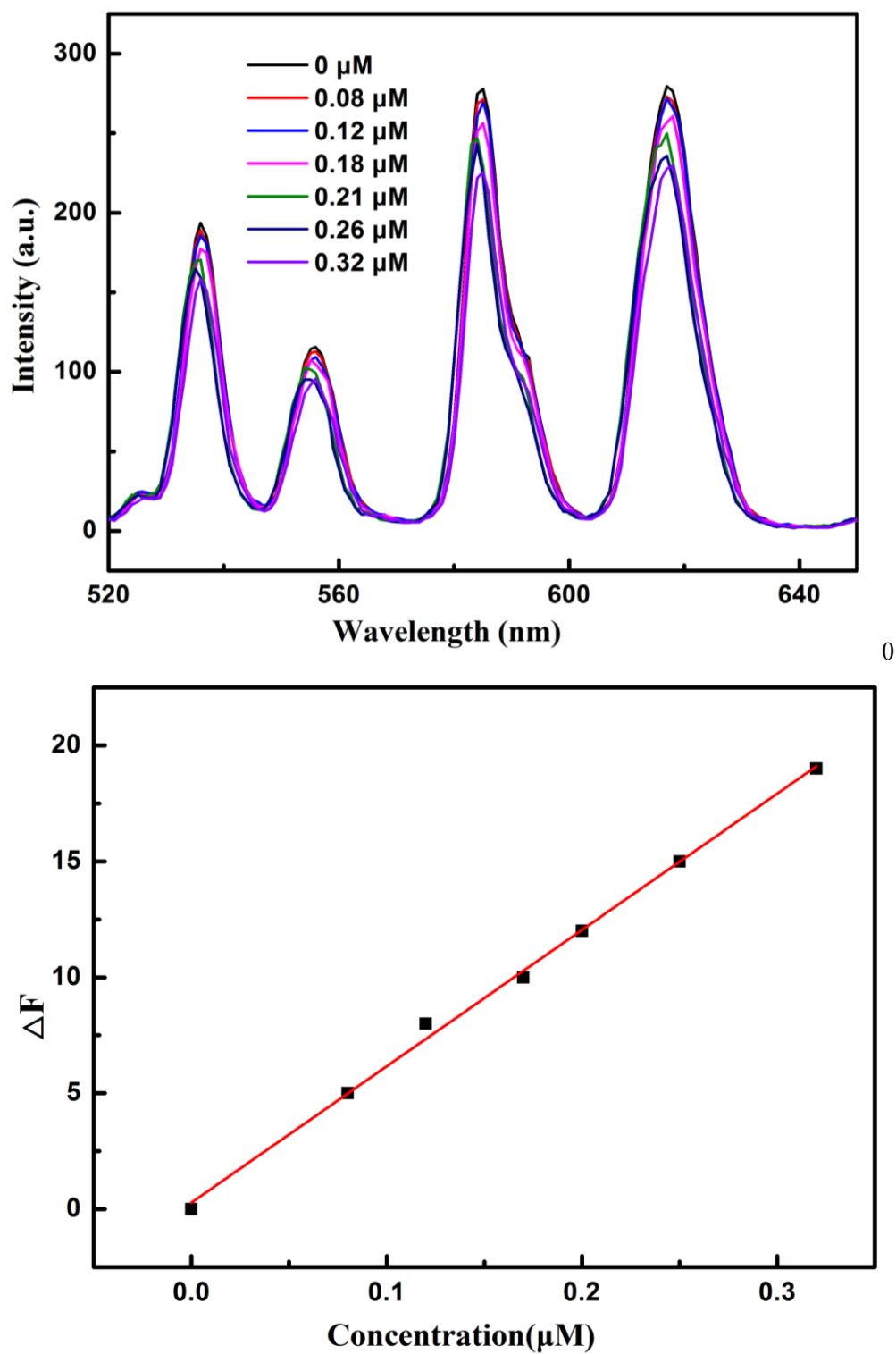


Fig. S12 Fluorescence spectra of Eu-IL exposed to various concentration of *p*-nitrotoluene.

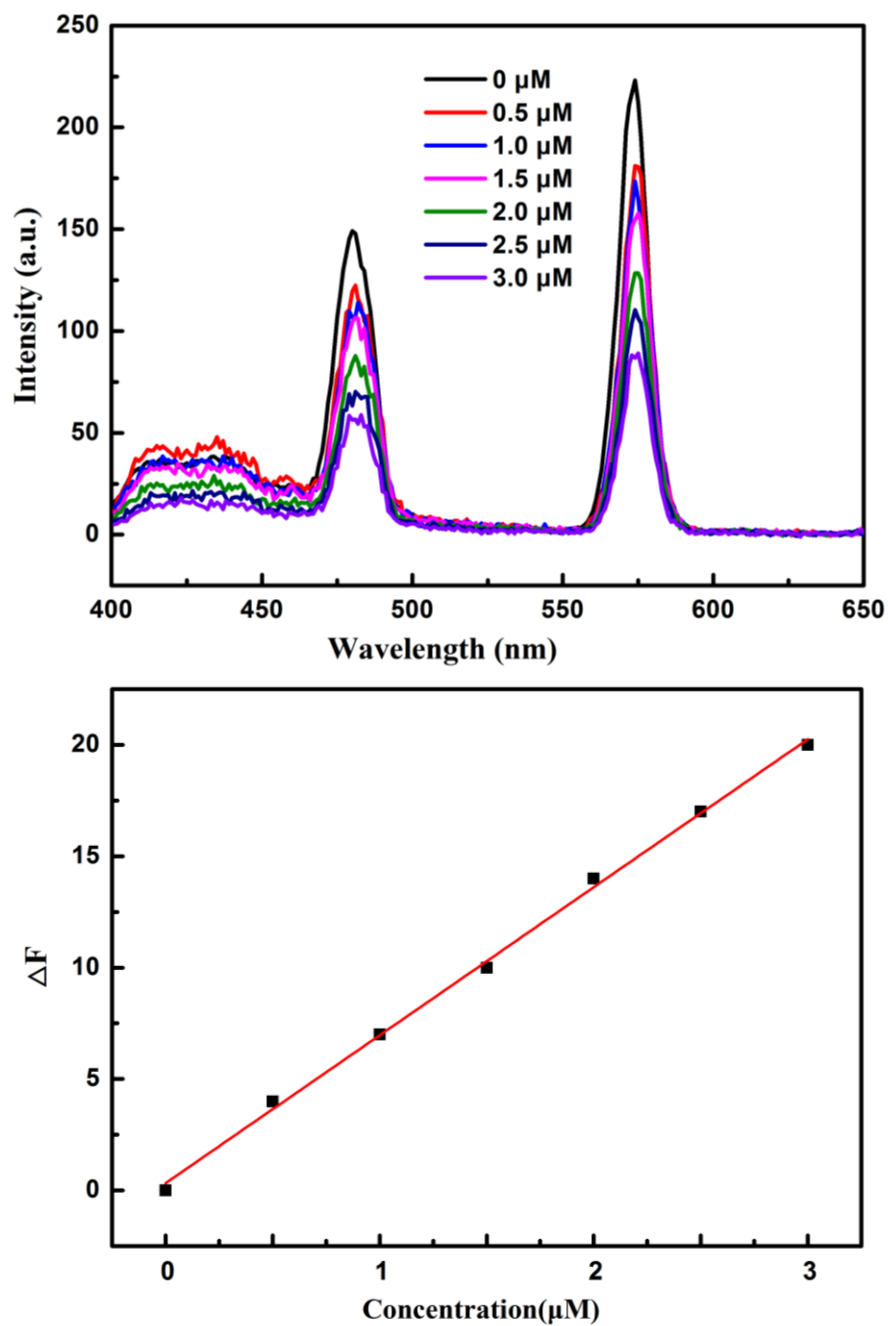


Fig. S13 Fluorescence spectra of Dy-IL exposed to various concentration of *p*-nitrotoluene.

Fig. S14 and Fig. S15 show series quenching efficiency of *o*-(*m*-, *p*-)nitrotoluen correspond to the data of Fig. 3 and Fig. 4 in the article.

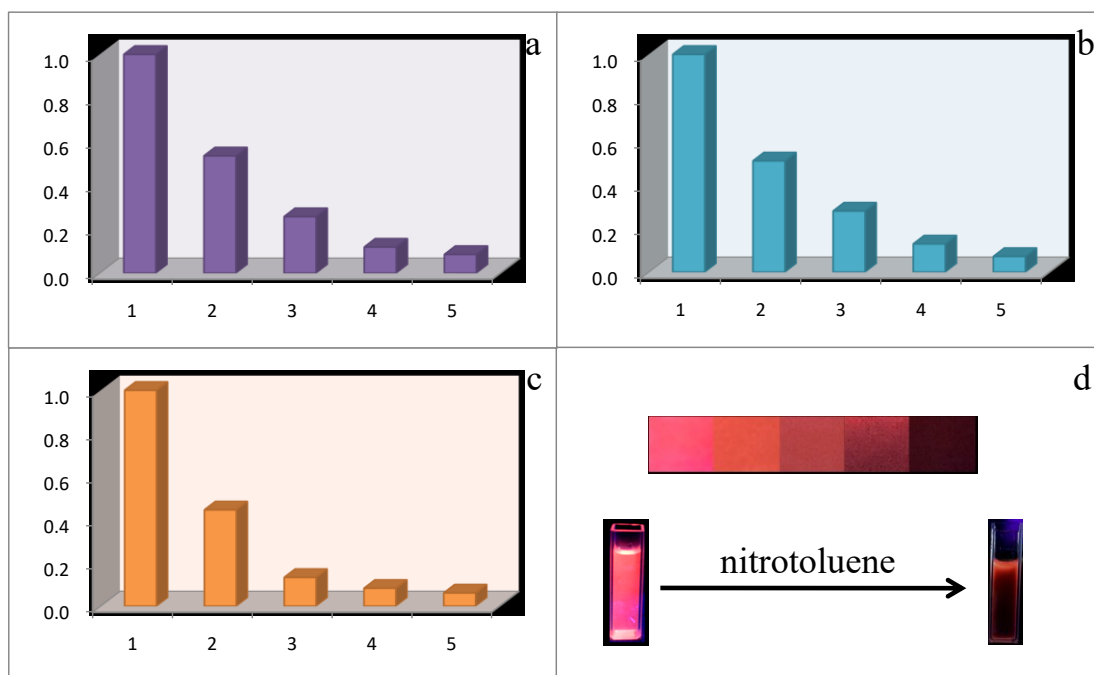


Fig. S14 Fluorescence quenching efficiency of [MOEMIm][Eu(NO₃)₄] for certain concentration of *o*-(*m*-, *p*-)nitrotoluene.

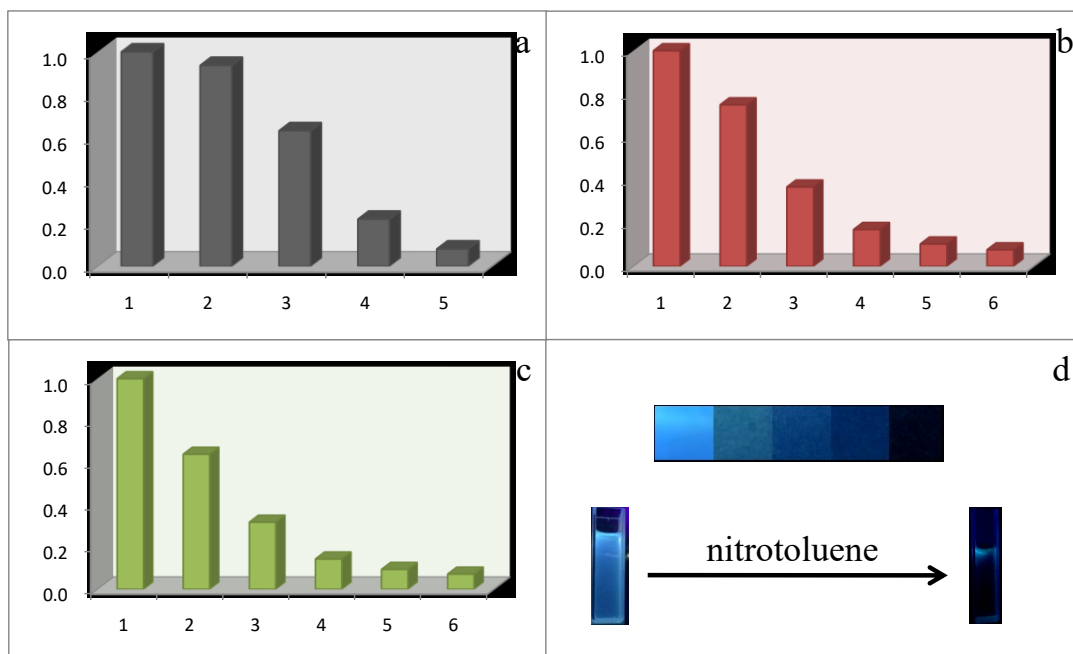


Fig. S15 Fluorescence quenching efficiency of [MOEMIm][Dy(NO₃)₄] for certain concentration of *o*-(*m*-, *p*-)nitrotoluene.