

Supplementary Materials

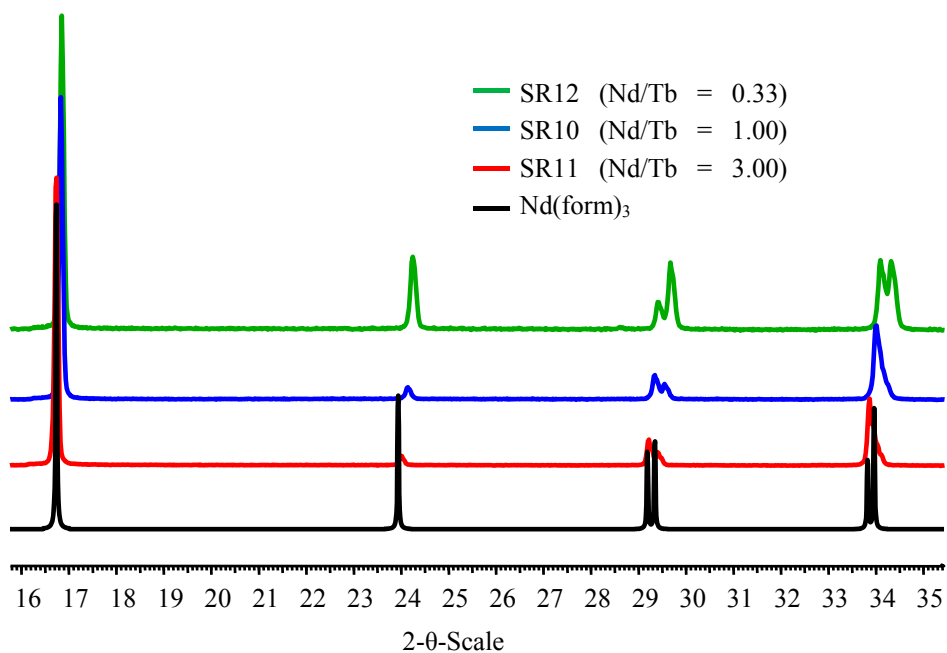


Figure S1. The PXR D pattern of the Nd(form)₃ MOF and the three MOFs with varying Nd/Tb ratios.

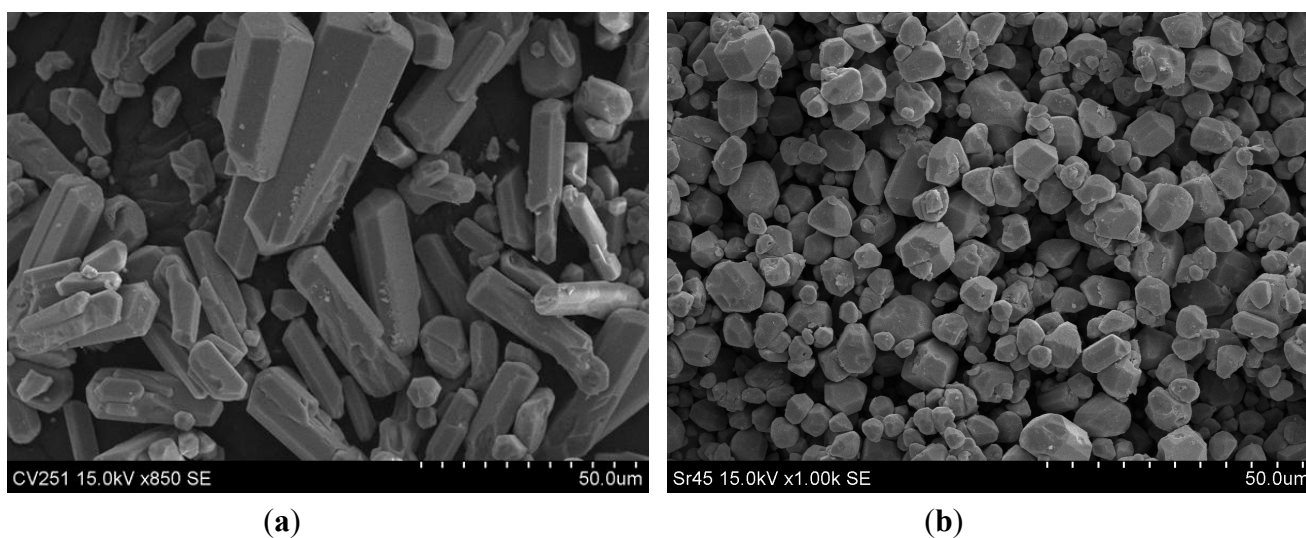


Figure S2. The SEM images showing the larger needle-shaped crystals of the Nd(form)₃ MOF (a, average crystal size 50 μm) and the smaller spherical crystals of Eu(form)₃ (b, average crystal size 5–10 μm).

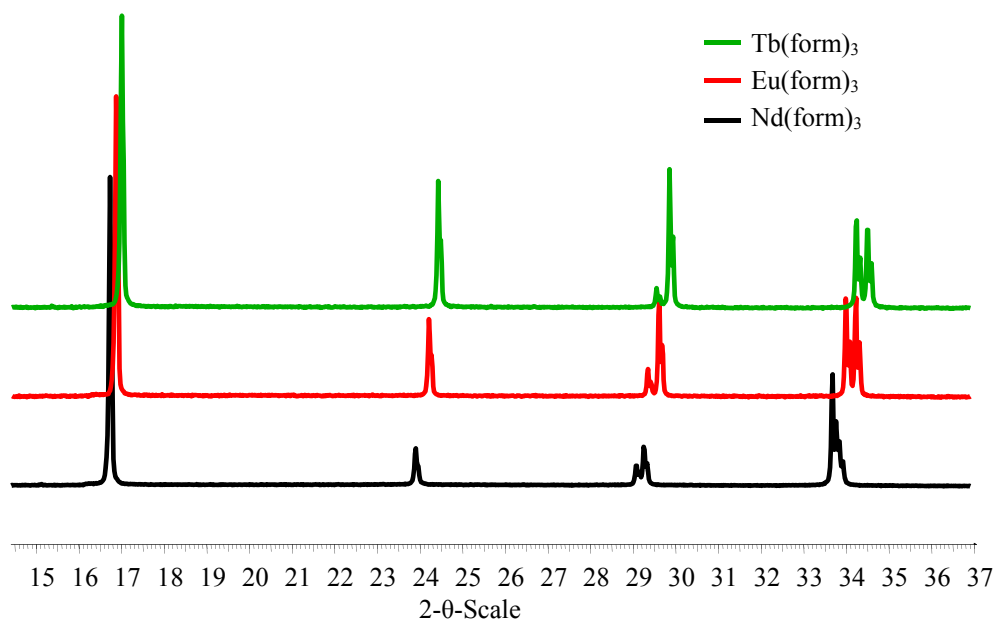


Figure S3. The PXRD pattern of the Nd(form)₃, Eu(form)₃ and Tb(form)₃ MOF.

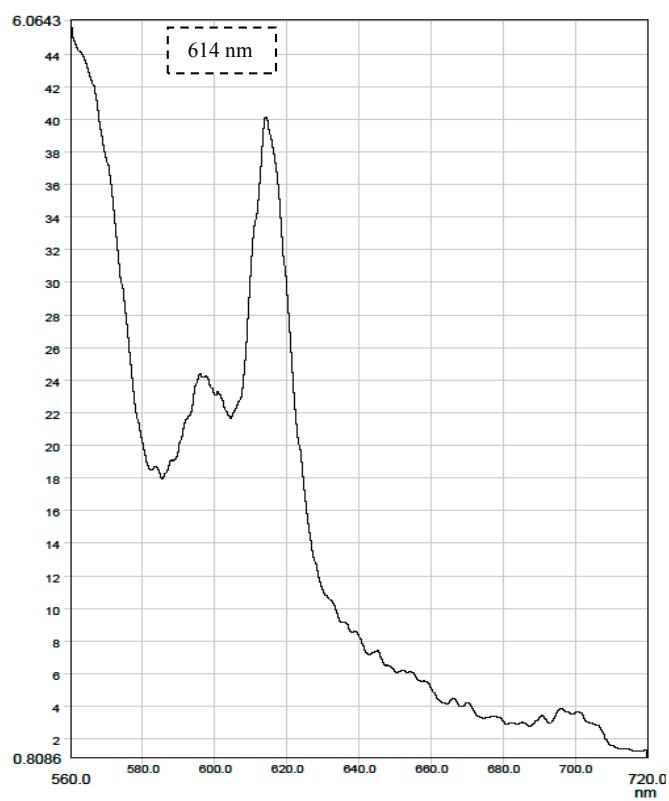


Figure S4. The luminescence spectrum of the Eu@MIL-103(Nd) MOF showing weak Eu-emission.

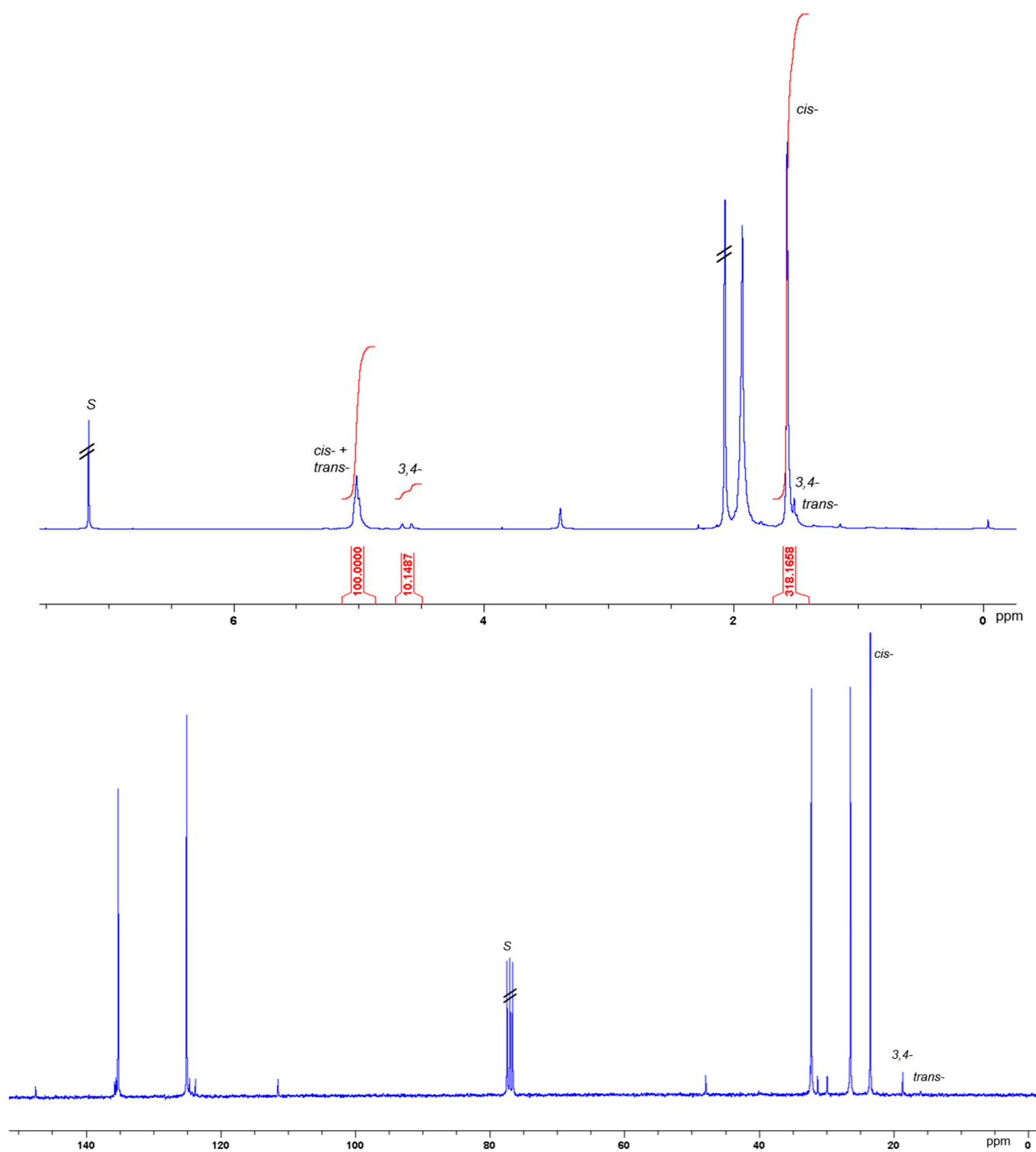


Figure S5. ^1H (top) and ^{13}C (bottom) NMR spectrum of a selected *cis*-regular polyisoprene sample (run 3, solvent CDCl_3 labelled as S).

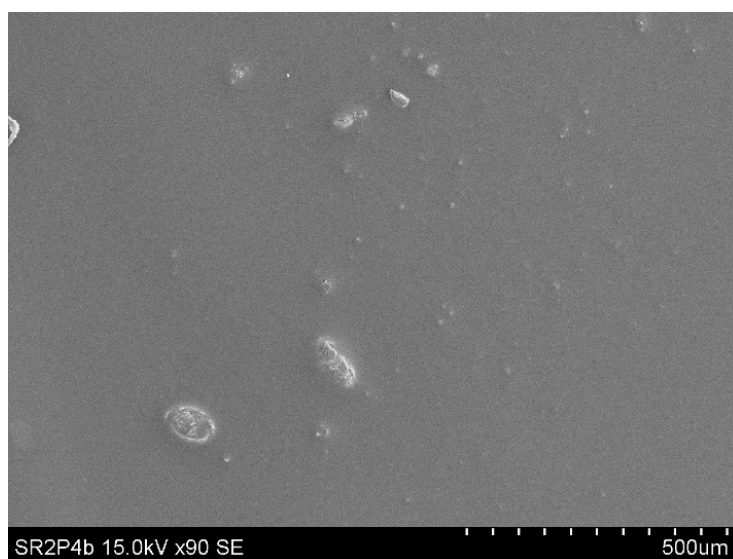


Figure S6. The SEM image of run 3 polymer sample showing dispersed MOF particles.

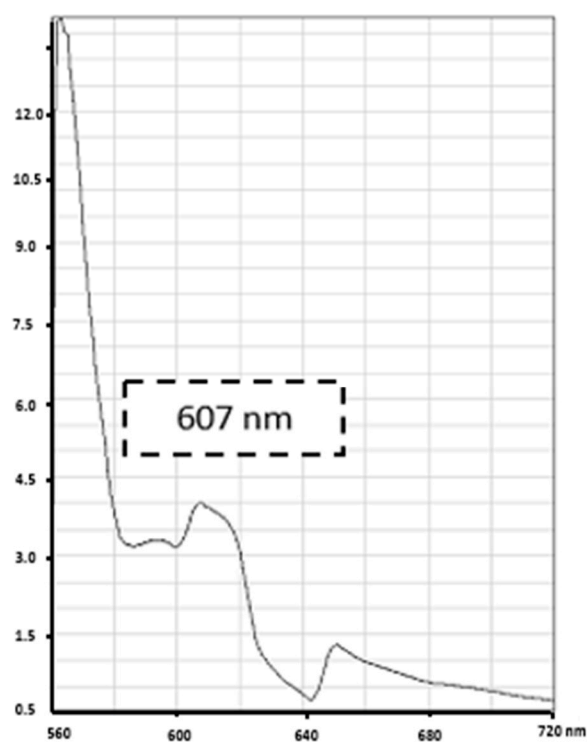


Figure S7. The quenched luminescence spectrum of the sample polymer 17 produced using the Eu@MIL-103(Nd) MOF as pre-catalyst.