

## Support information

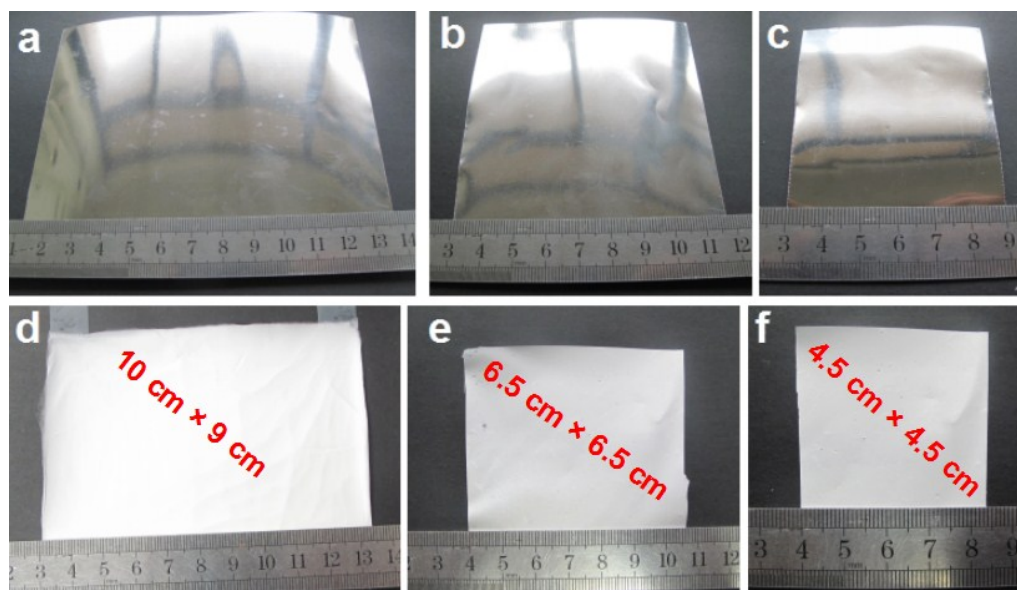


Fig. S1 (a, b, c) the different areas of collectors; (d, e, f) obtained the different areas of the precursor membranes.

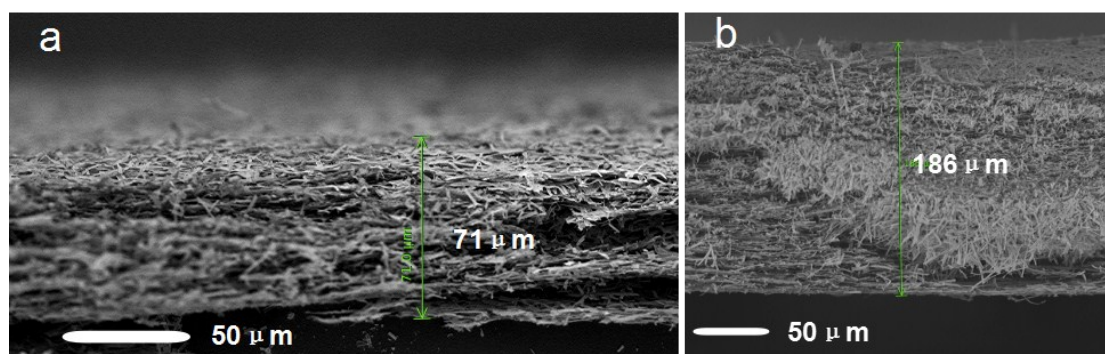


Fig. S2 With different electrospinning time, obtained the different thicknesses of the precursor membranes, (a) 4 h, (b) 10 h.

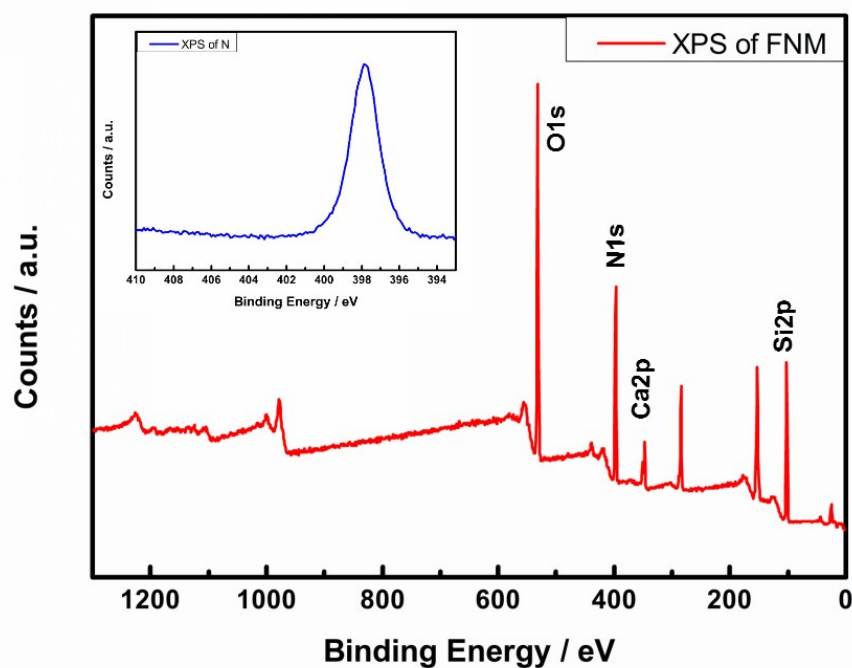


Fig. S3 XPS survey spectra of FNM, the inset shows the XPS of N1s

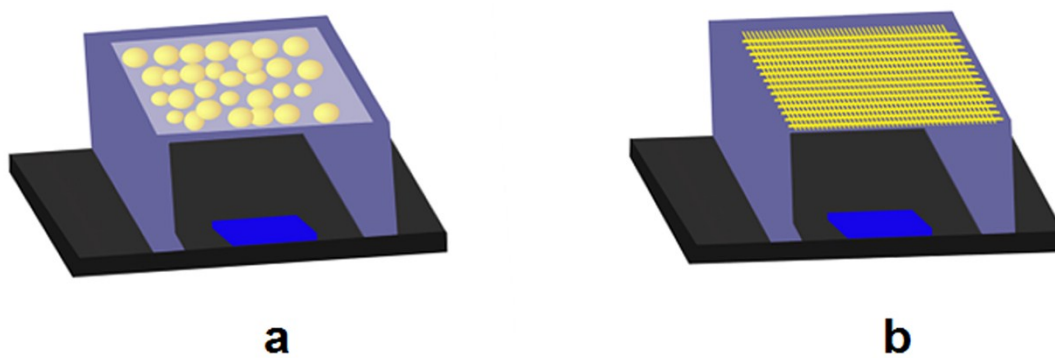


Fig. S4 The conventional florescence layer made up of phosphor and epoxy used in remote packaging WLEDs (a), free-standing inorganic fluorescence membrane used in remote packaging (b).