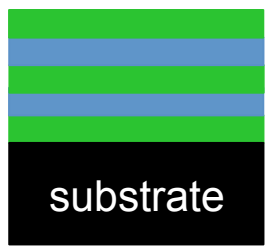
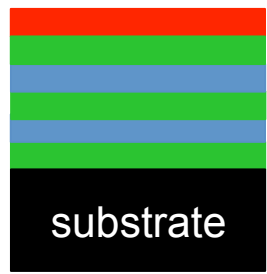





(b)



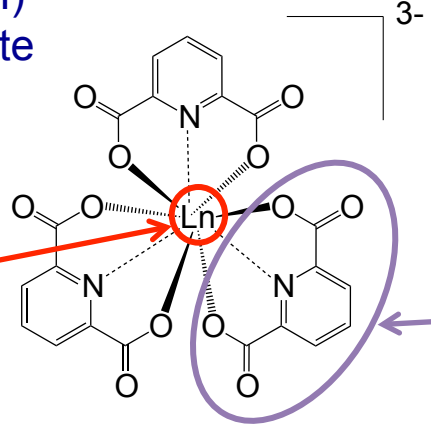
dip sample in  
 $[\text{Ln}(\text{DPA})_3]^{3-}$  solution,  
 rinse off excess



-  =  $\text{PAH}^+$
-  =  $\text{PSS}^-$
-  =  $[\text{Ln}(\text{DPA})_3]^{3-}$

Lanthanide(III)  
 tris-dipicolinate  
 $[\text{Ln}(\text{DPA})_3]^{3-}$   
 complex

Trivalent  
 lanthanide  
 $(\text{Ln}^{3+})$



Note:  $[\text{Ln}(\text{DPA})_3]^{3-}$   
 may diffuse through  
 the PEM structure.

Dipicolinate (DPA)  
 chelate

$\text{Ln} = \text{Eu}, \text{Tb}, \text{or any}$   
 other lanthanide