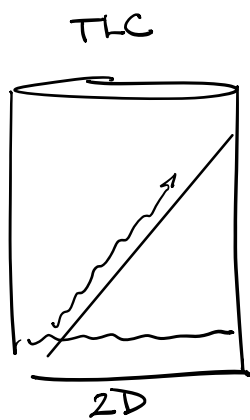
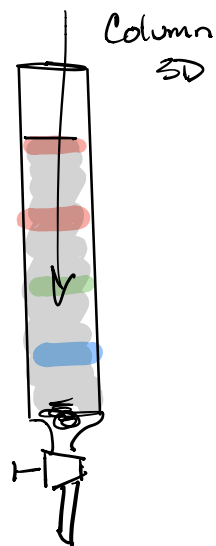


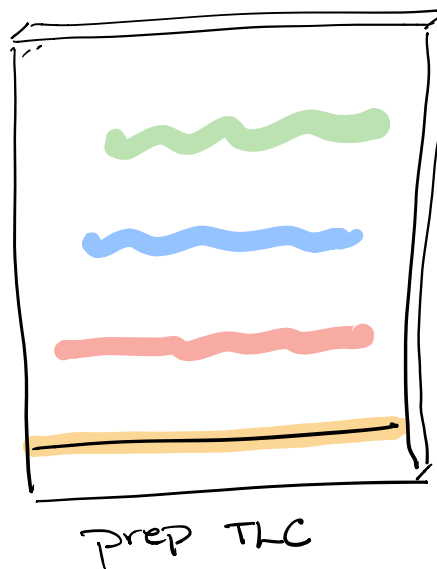
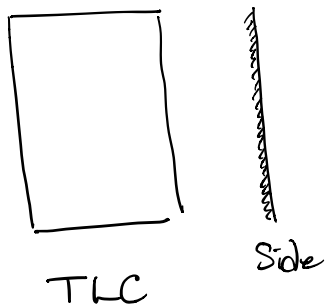
# Column Chromatography



Analysis of  
Mixtures



Seperation of  
Mixture



# Column Chromatograph (flash Chromatography)

10-100 mm

⇒ pressurized

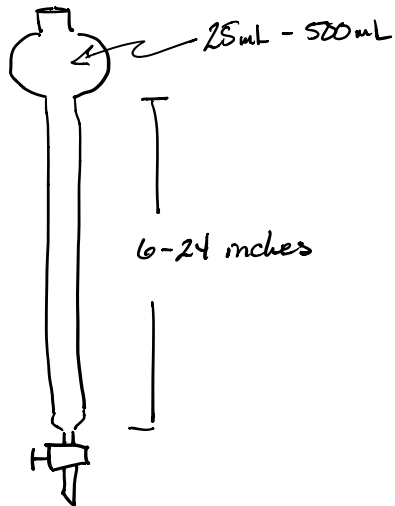
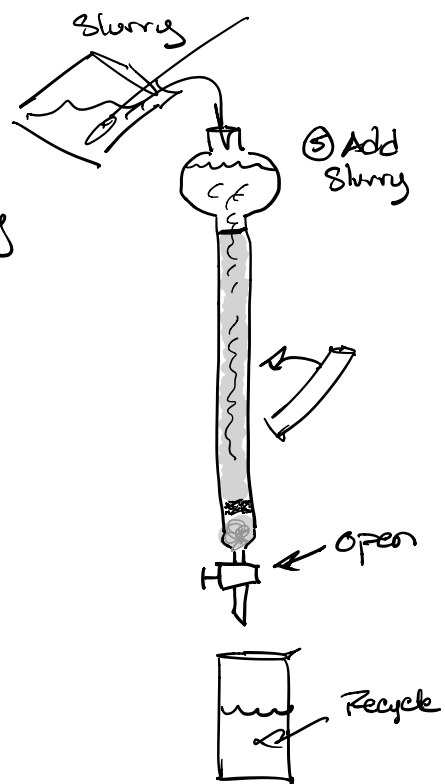
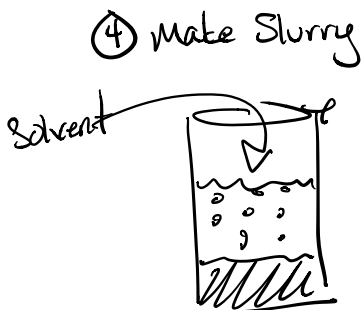
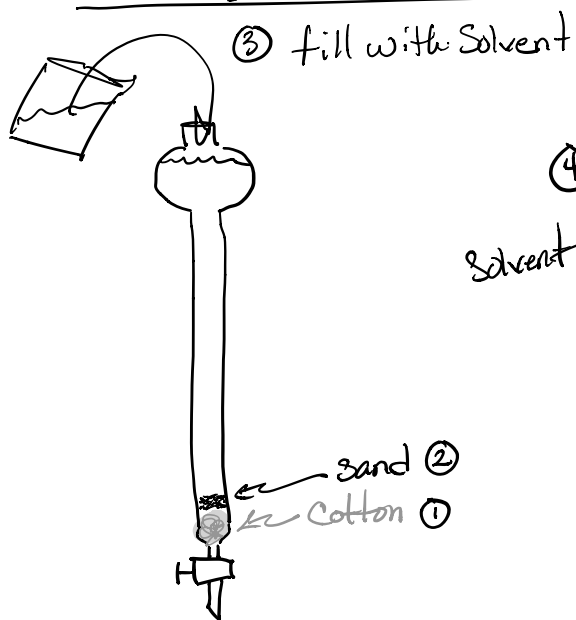


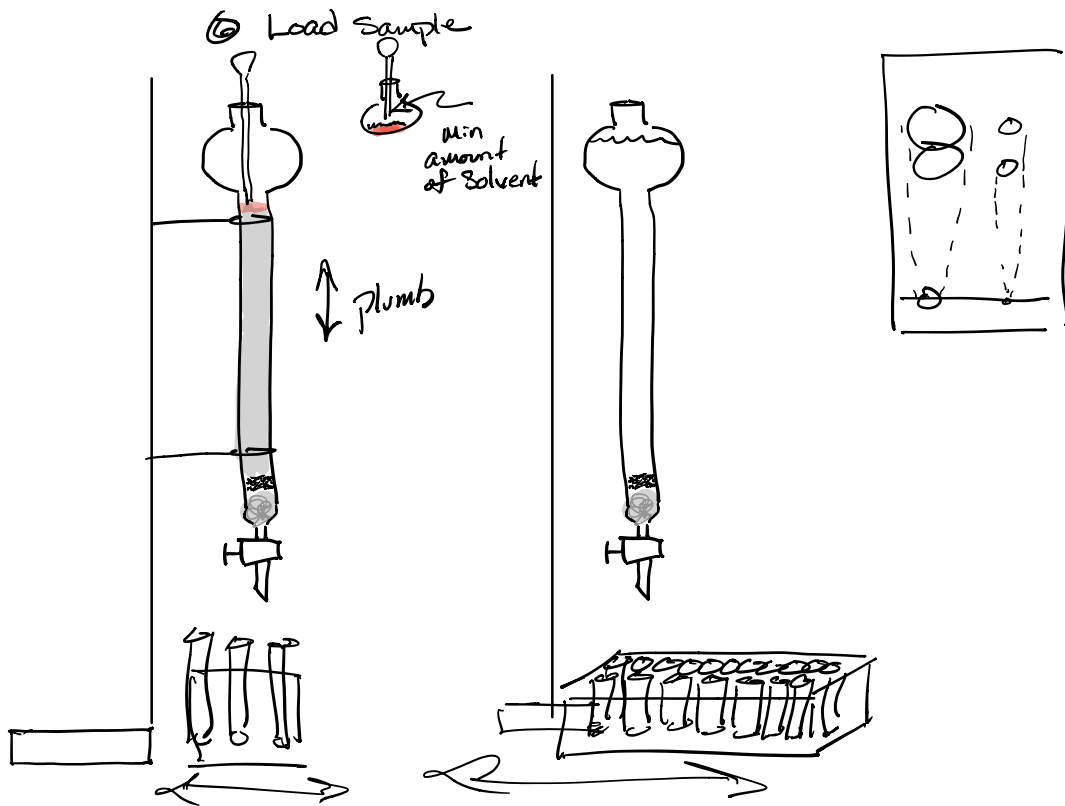
Table in Paxia  
in Appendix  
g material →

dia Column  
Height Column  
g of Solid Support

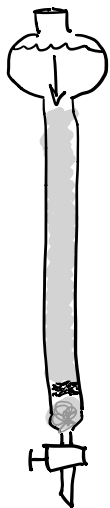
## Packing & Preparing Column



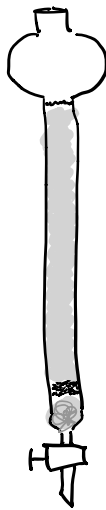
# Loading & Running Column



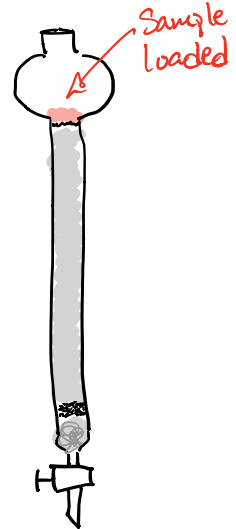
Preparing to load Sample

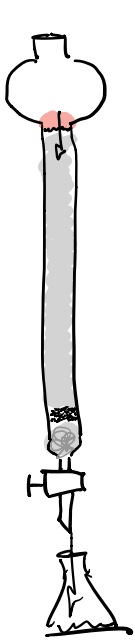


- ① Drawdown Solvent level to top of Solid Support  
⇒ Do not let solvent go below Solid Support

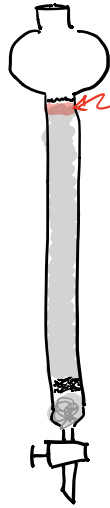


- ② Load Sample in as small an amount of Solvent as possible



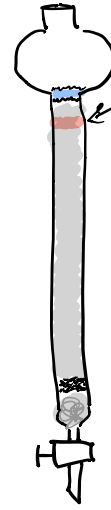


③ Draw down

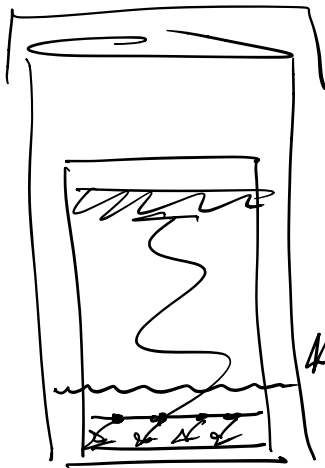


Drawn in to Solid support

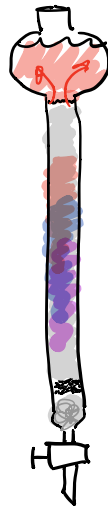
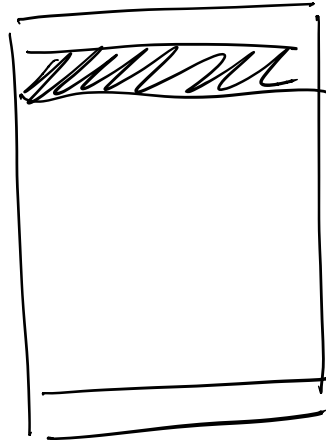
④ Add solvent ~ 1 ml & draw down x 3 or x 4

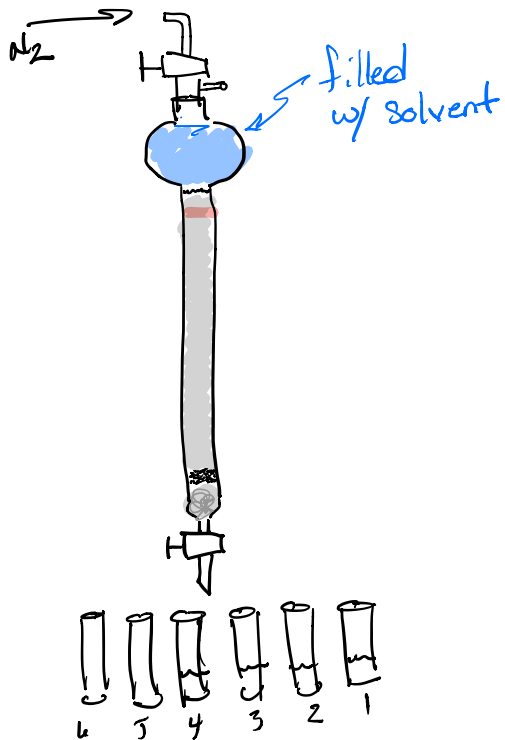


Sample drawn in to Column

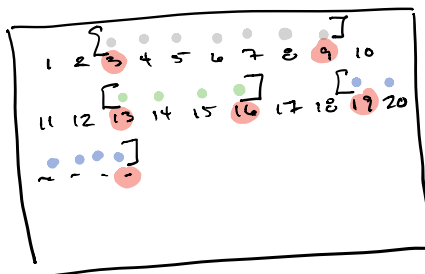


Problem

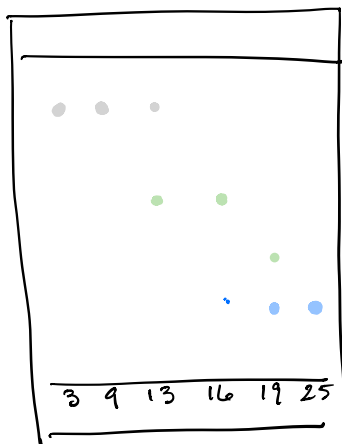




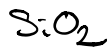
Analyse test tubes



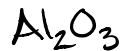
View under UV or  
Sometimes we stain it



Silica gel



Alumina



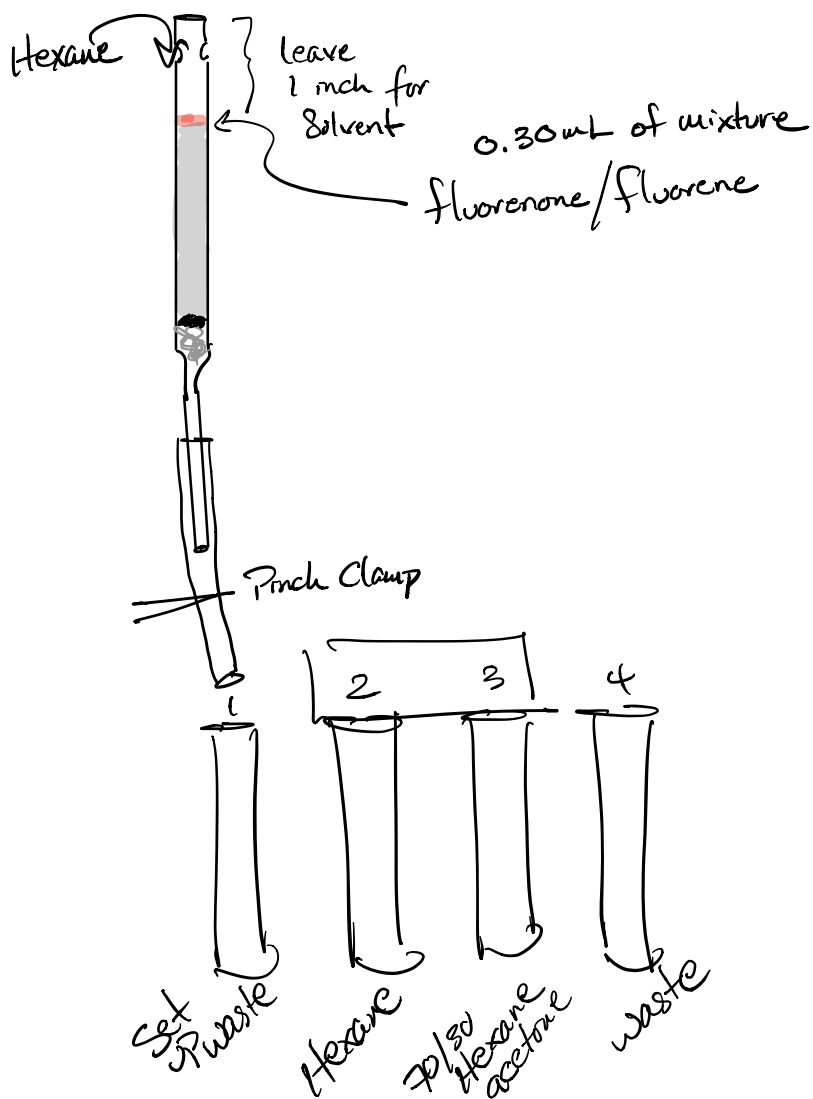
} Strong Lewis acids  
don't dissolve in solvents

# Elution order

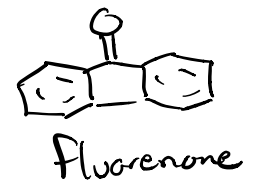
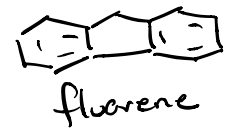
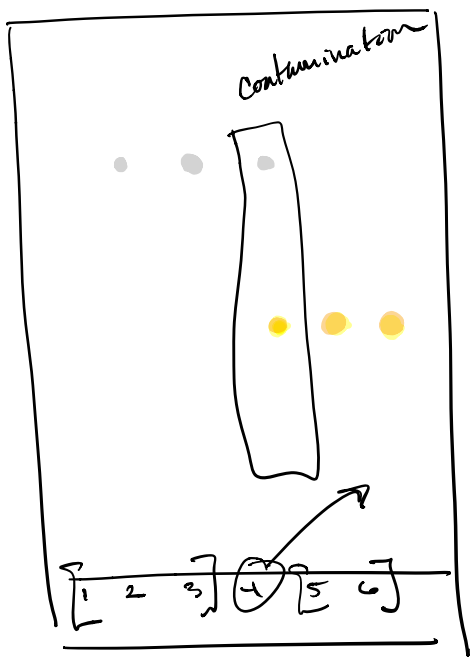
Last out  
↓  
1<sup>st</sup> out

Carboxylic acids  
alcohols  
Ketones  
Esters  
Ethers  
Aromatics  
Hydrocarbons non-polar

↑ Increasing polarity



developed in  $CH_2Cl_2$



$$\text{Partition Coef} = \frac{\int \int_{\text{mobile phase}}}{\int \int_{\text{stationary phase}}}$$

solvent

solid support