

CHROMATOGRAPHY

By

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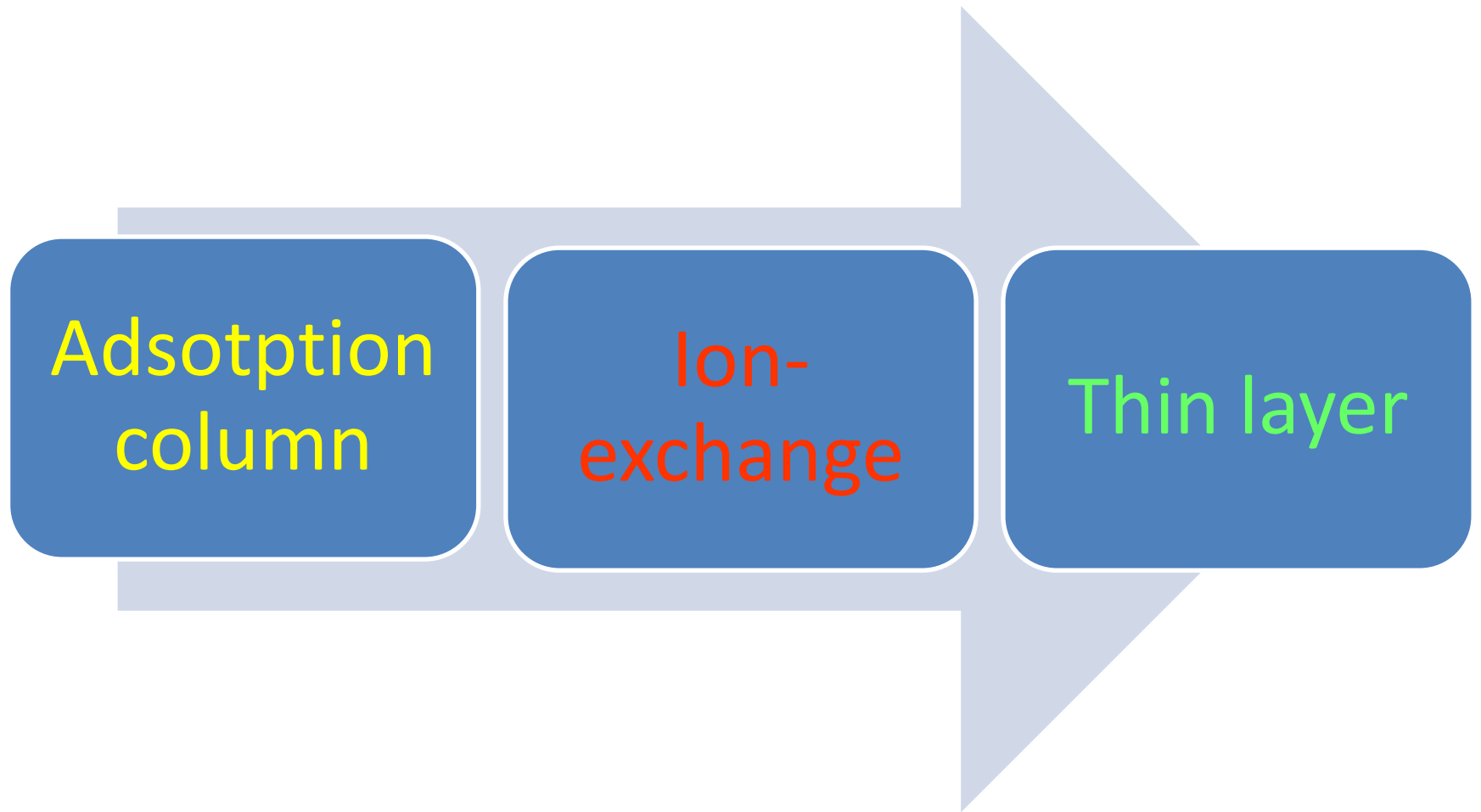
Chromatography

- It is analytical technique separation of both organic and inorganic substance
- The separation of closely related compounds
- The Russian botanist , Tswet in 1933
- The separation of coloured substance
- The term chromatograph greek(Chromatos = colour, Graphs =writing)

Types of chromatography

- There are two types of chromatography
 - ✓ Adsorption chromatography (Liquid –solid)
 - ✓ Partition chromatography (Liquid-liquid)

Adsorption chromatography



- The fixed or stationary phase may be solid or a liquid
- The mobile phase may be liquid or gas
- The stationary phase of the solid system is known as **Adsorption chromatography**
- The stationary phase of the liquid system is known as **Partition chromatography**

Principle of chromatography

- The partial or complete resolution of mixtures into their components in different zones. The separation of the components is due to the differences in their affinity towards the stationary and mobile phase

Column chromatography

- There are two types of column chromatography
 - ❖ Adsorption column chromatography
 - ❖ Partition column chromatograph
- Adsorption chromatography
 - It is a liquid or solid chromatography

Principle of Column chromatography

- When a solution containing different components is passed through a tightly packed column of a solid adsorbent, the different components show differential adsorption of the adsorbent.
- The strongly adsorbed component moves down the column slowly
- The least adsorbed component moves down the column faster

- The technique involve the following steps
 - Choice of adsorbents and solvents
 - Packing the column
 - Developing the chromatogram
 - Separation of individual components

- Choice of adsorbents and solvents

Alumina, silica gel, chalk Magnesium oxide are used **adsorbents**

Water, ether , benzene, pyridine and alcohol are used as a **solvents**

Developing the chromatogram

