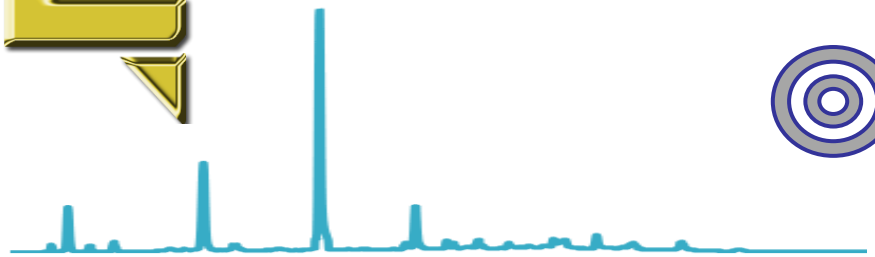
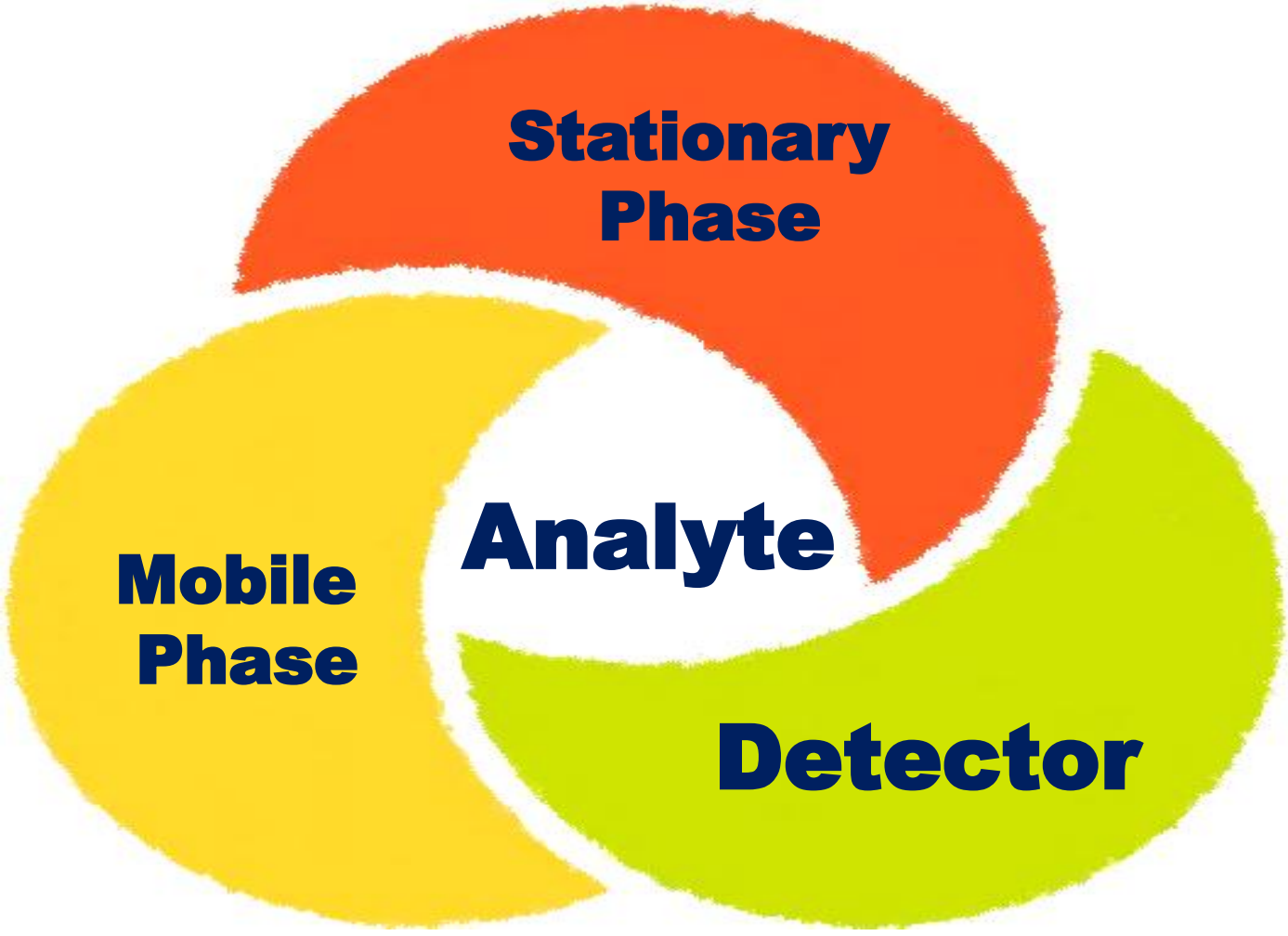
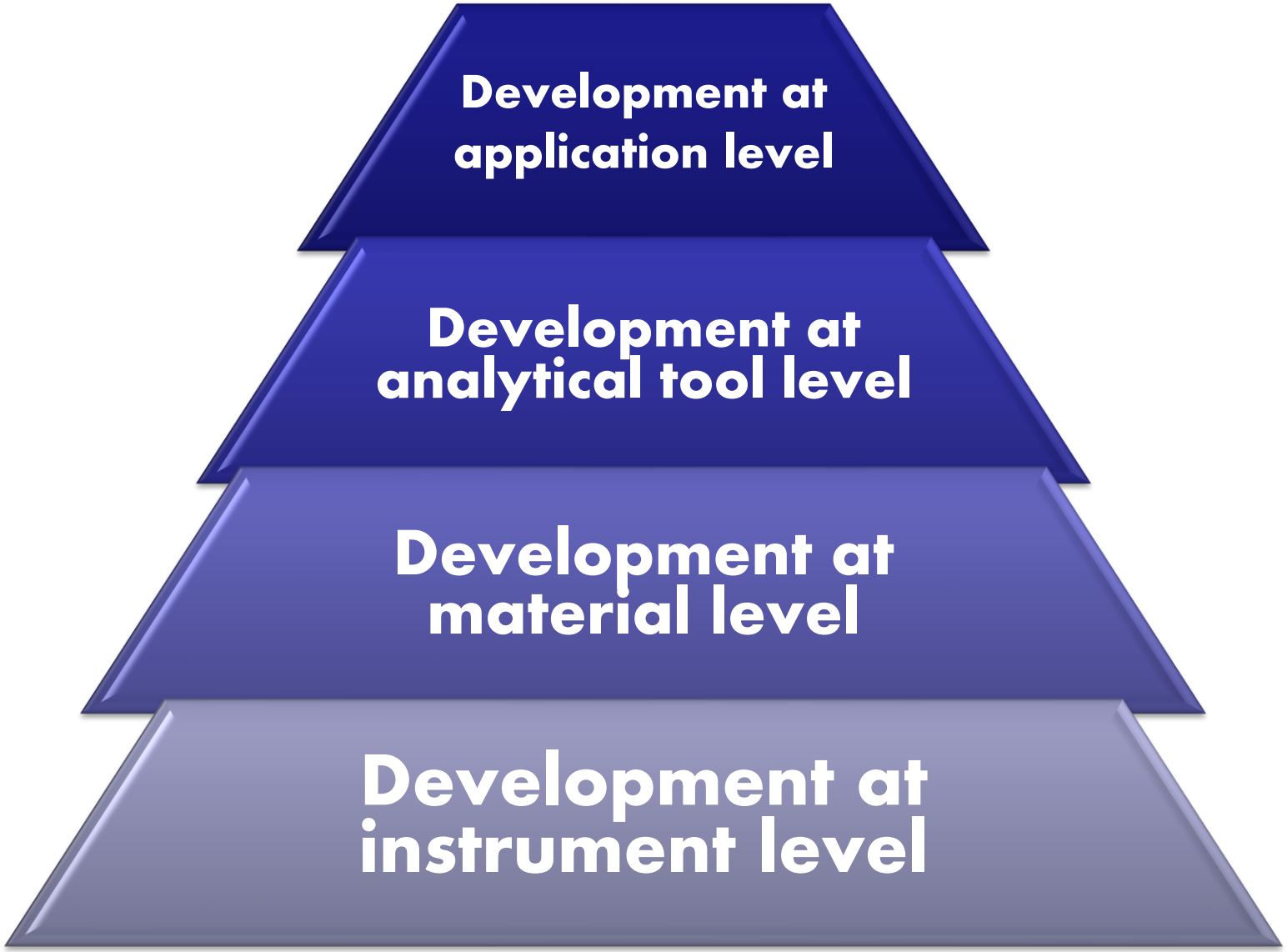
Chem 651
Advanced Studies in Instrumental Analysis



Ahmad Aqel Ifseisi
Professor of Analytical Chemistry
College of Science, Department of Chemistry
King Saud University
P.O. Box 2455 Riyadh 11451 Saudi Arabia
Building: 05, Office: 2A149, Lab: 2A127
Tel. 014674198, Fax: 014675992
Web site: http://fac.ksu.edu.sa/aifseisi
E-mail: ahmad3qel@gmail.com
aifseisi@ksu.edu.sa


Stationary Phase
Mobile Phase
Analyte
Detector


Development at application level
Development at analytical tool level
Development at material level
Development at instrument level

Chromatographic Applications

The most widely used analytical techniques for separating & analyzing mixtures of chemical substances, compounds & materials.

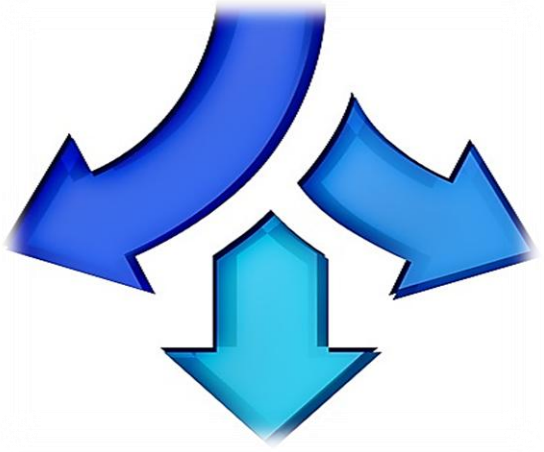
HPLC and **GC** are the most widely utilized analytical separation techniques due to their universal applicability for qualitative & quantitative analysis of a wide range of compounds.

Trends and Developments in Chromatography

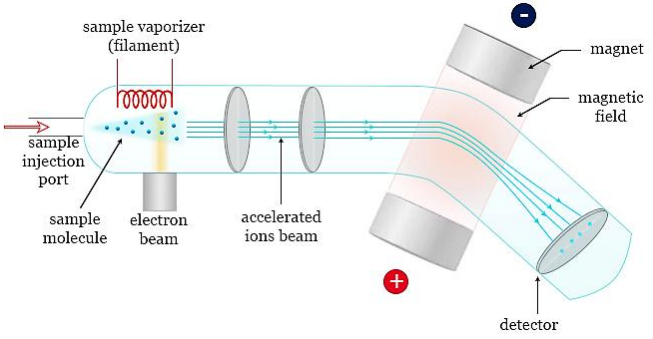
Chromatography research is still under development, although many chromatographers feel that **HPLC** is mature technique.

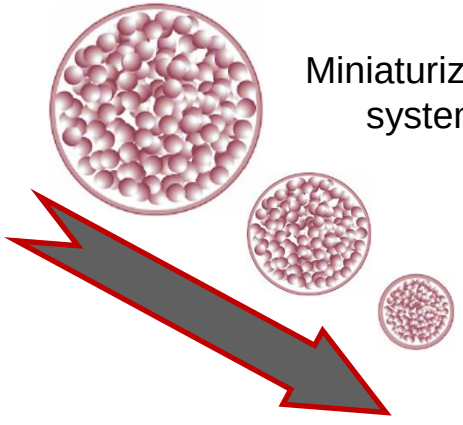
Chromatographic techniques have seen large developments in the following directions:

AI assistance



Detection techniques (high-resolution MS)





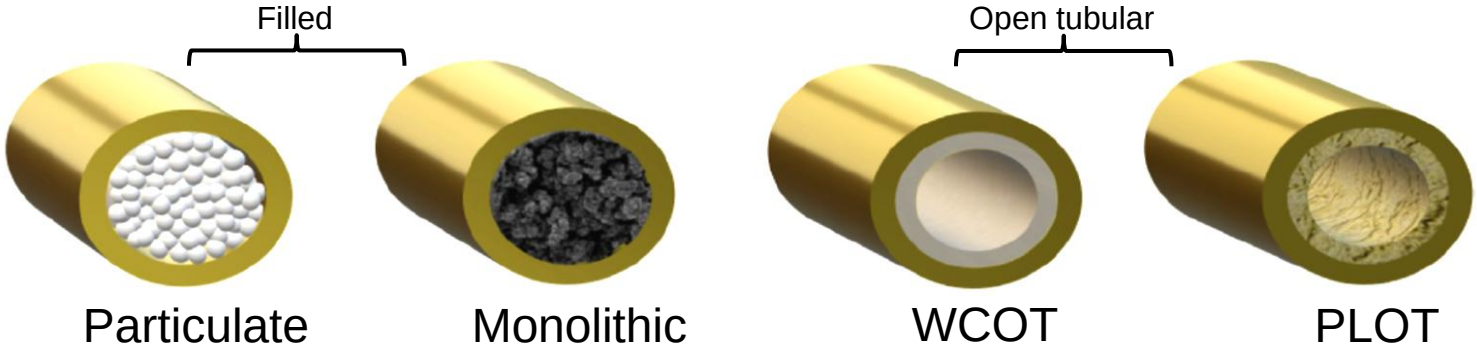
Miniaturization system

Fast separation methods

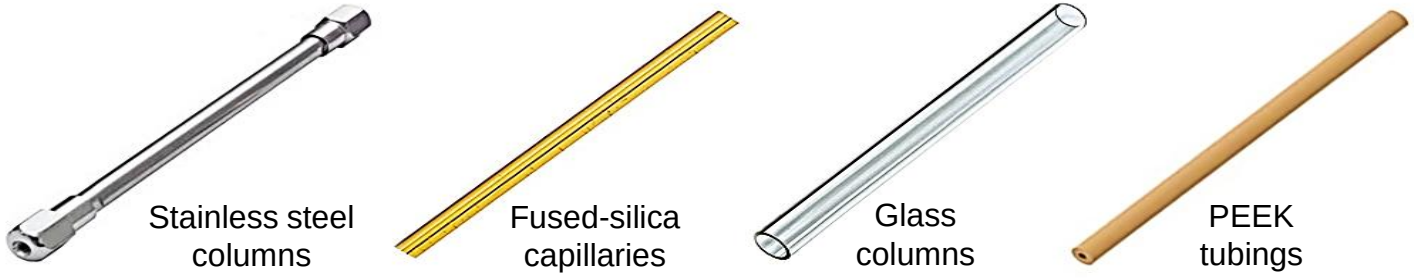
Ultra-high pressure

The column is considered the most important part in any **chromatographic system**, although it's the smallest component.

Basic types of columns used in chromatography:



The stationary phases are typically prepared inside:




Thank You!