# تفريغ فيزيكال 2

## محاضرة: Dispersed system part2

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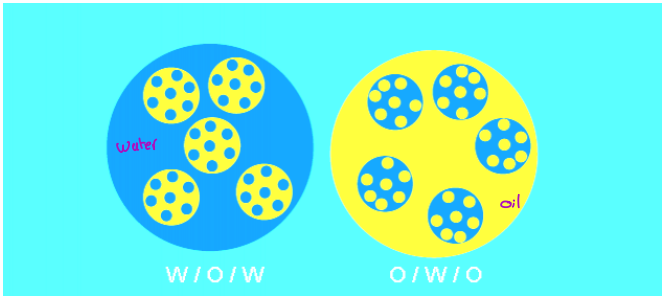
لجان الدُفعات

Soul Academy

sustained release تعطي

# Multiple emulsions

- Multiple emulsions are emulsions whose disperse phase contains droplets of another phase.
- They are made by emulsifying a water-in-oil emulsion with a hydrophilic surfactant to produce a water-in-oil-in-water system, or an oil-in-water system with a low HLB surfactant to produce an oil-in-water-in-oil system.




# Microemulsions

globular size is very small

- Microemulsions are homogeneous transparent systems of low viscosity which contain a high percentage of both oil and water and high concentrations (15–25%) of emulsifier mixture.
- Microemulsions form spontaneously when the components are mixed in the appropriate ratios and are thermodynamically stable.
- In their simplest form, microemulsions are small droplets (diameter 5–140 nm) of one liquid dispersed throughout another.
- The droplet size is therefore very much smaller than that of normal emulsions (which is why microemulsions are transparent) and the droplets are very much more uniform in size.

يحتاج تركيز عالي من emulsifying mixture الـ
بسبب حجم الصغير surface area ↑ وبح يكون الـ

a **suspension** is a **heterogeneous dosage form** in which **solid drug particles are dispersed throughout a liquid phase** (usually aqueous, but can also be oily). These solid particles are **insoluble** in the dispersion medium, and they remain suspended with the aid of suspending agents or through agitation.

**Flocculation** is the process by which **dispersed solid particles** in a suspension **form loose, reversible aggregates** (called **flocs**) due to weak attractive forces (e.g., van der Waals forces). These flocs **settle rapidly**, but they do **not form a hard cake**, and they can be **easily redispersed** by gentle shaking.

# Suspensions

اذا كان ال non aqueous suspension
لازم اشوف كمية الماء الموجودة فيه
لانه اذا موجود ممكن يأثر على الstability

## Stability of nonaqueous suspensions

- Many pharmaceutical aerosols consist of solids dispersed in a non-aqueous propellant or propellant mixture.
- Low amounts of water adsorb at the particle surface and can lead to aggregation of the particles or to deposition on the walls of the container, which adversely affects the product.

لا تنسوا زميلتنا ايهم من دعائكم