

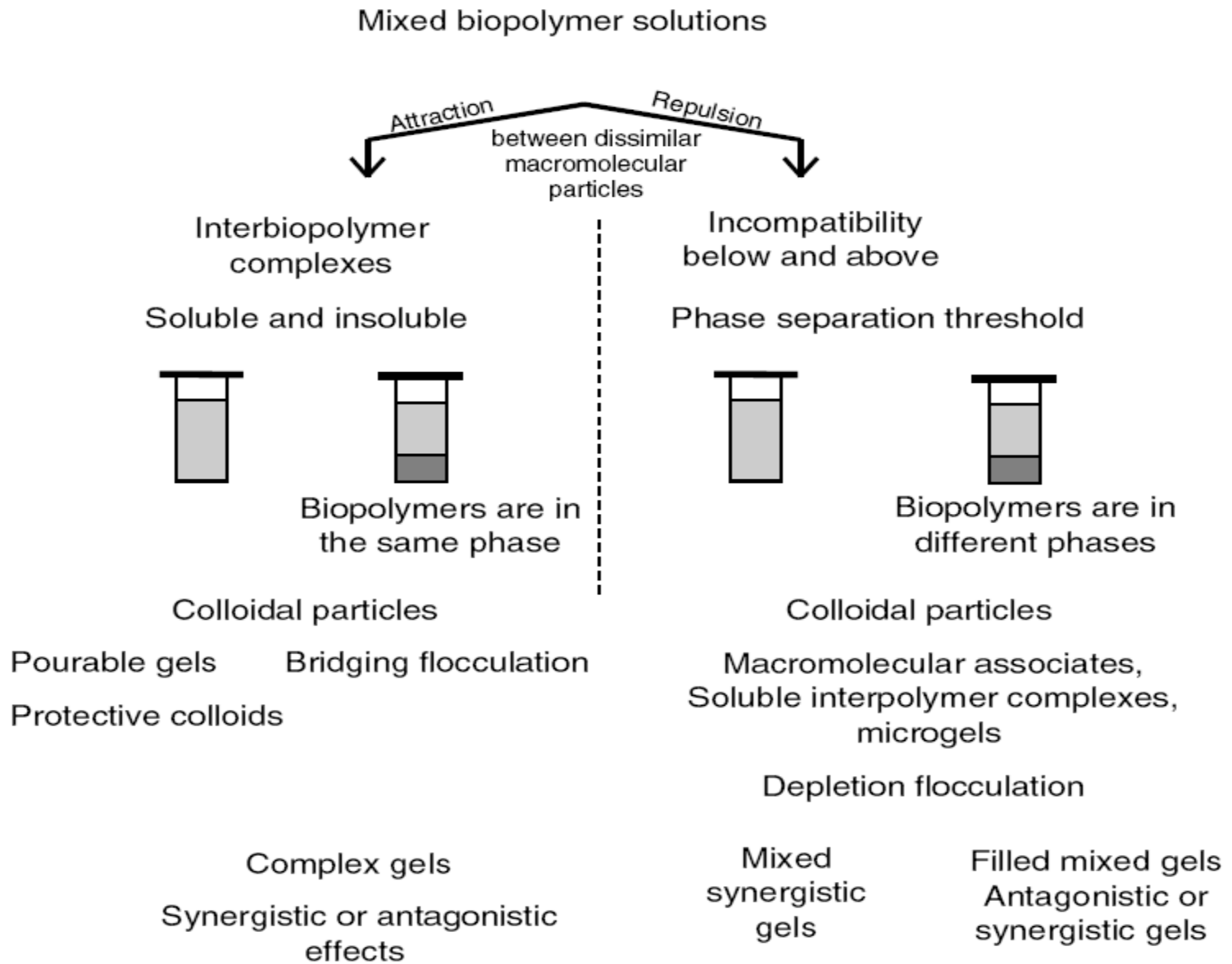


دانشگاه صنعتی اصفهان

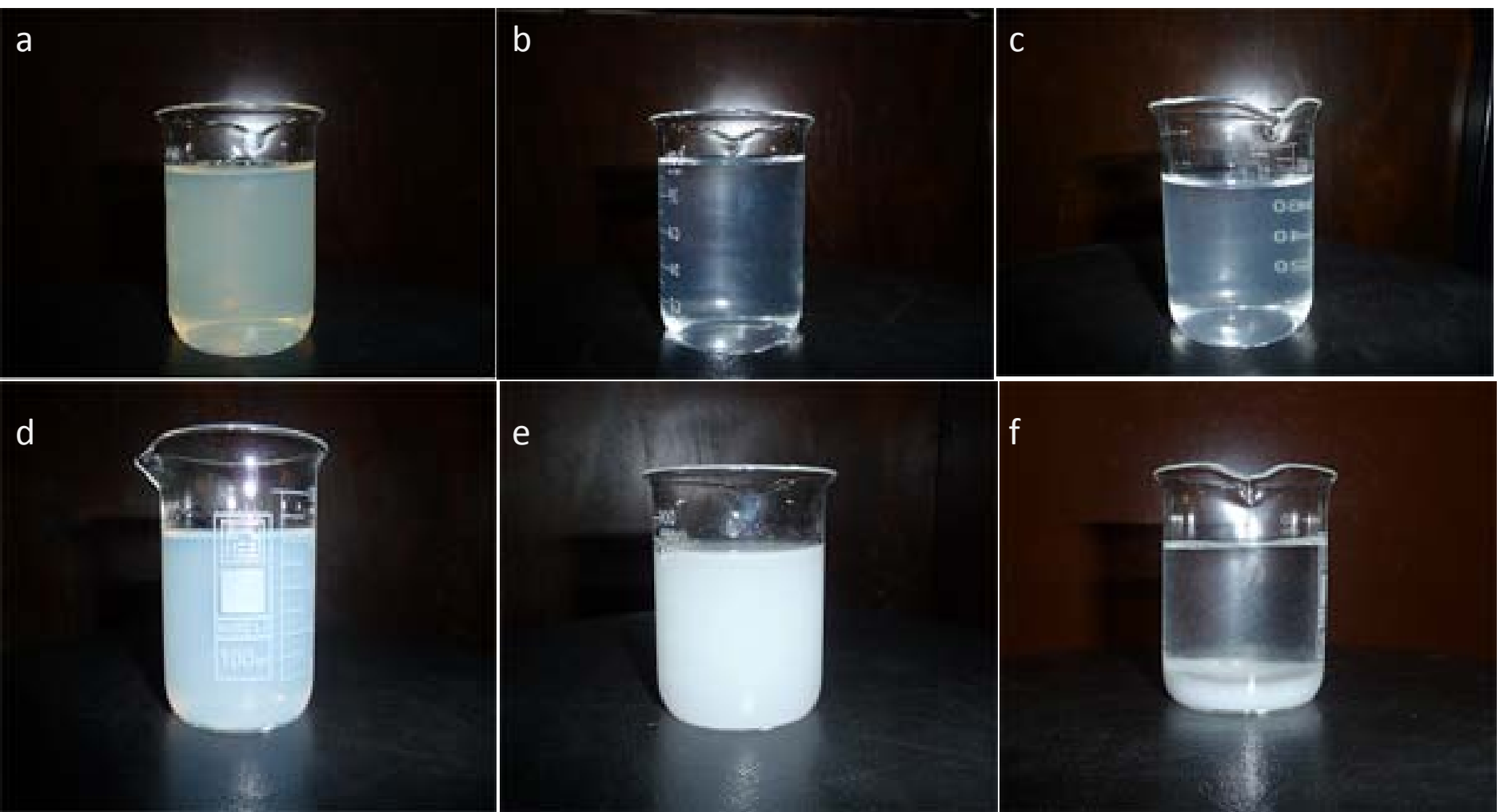
# صنایع لبنی تکمیلی

دکتر علی نصیرپور

1391



**Schematic illustration of the phase behavior of mixed biopolymer solutions containing molecular and colloidal particles.**



Appearance of BLG and tragacanth solution; a- BLG solution (5%), b- tragacanth solution (0.1%), c- BLG-tragacanth mixture solution at neutral pH, d- BLG-tragacanth mixture solution at pH= 5.5, e- BLG-tragacanth mixture solution at pH=4, f- associative phase separation and sedimentation of BLG-tragacanth complexes

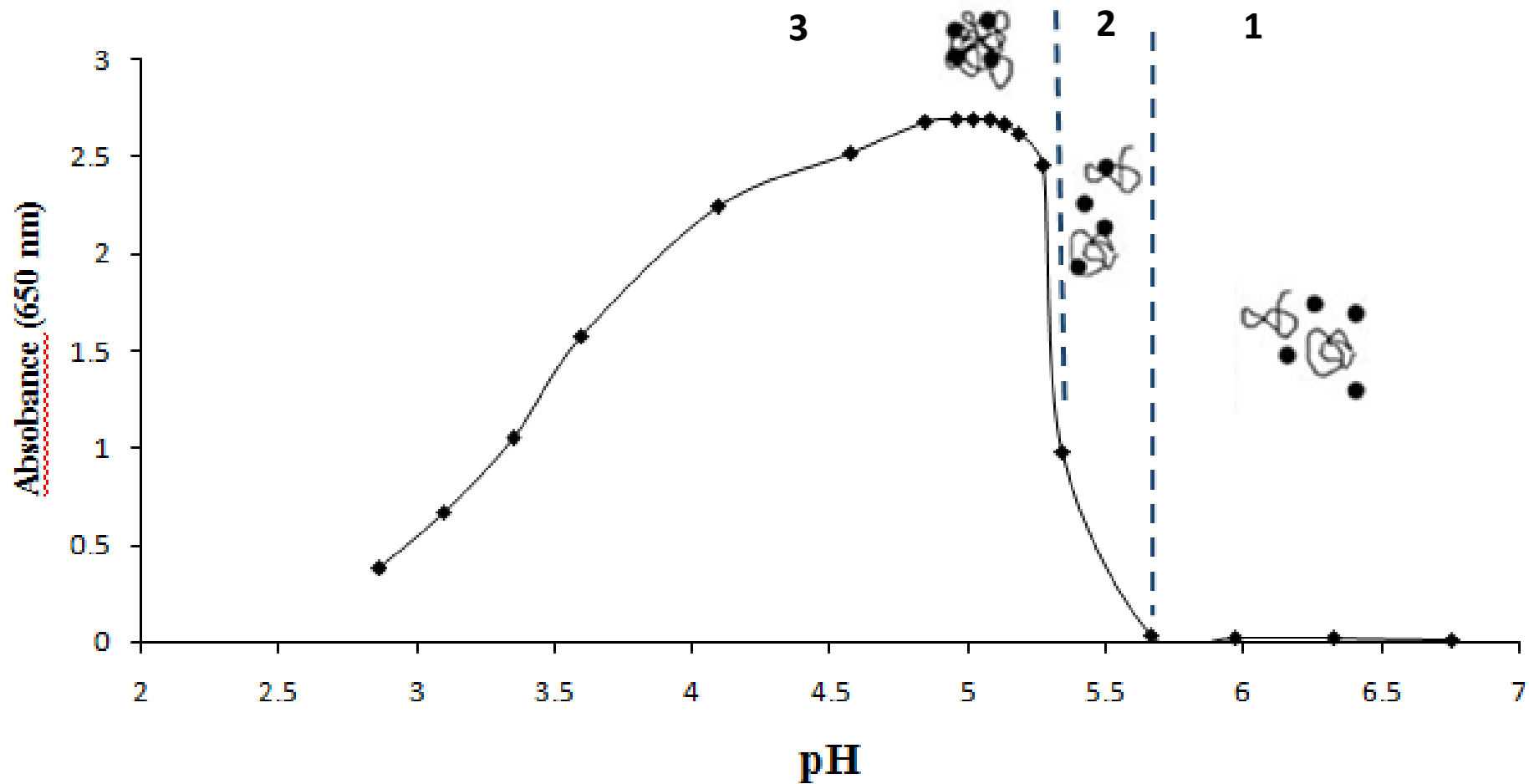
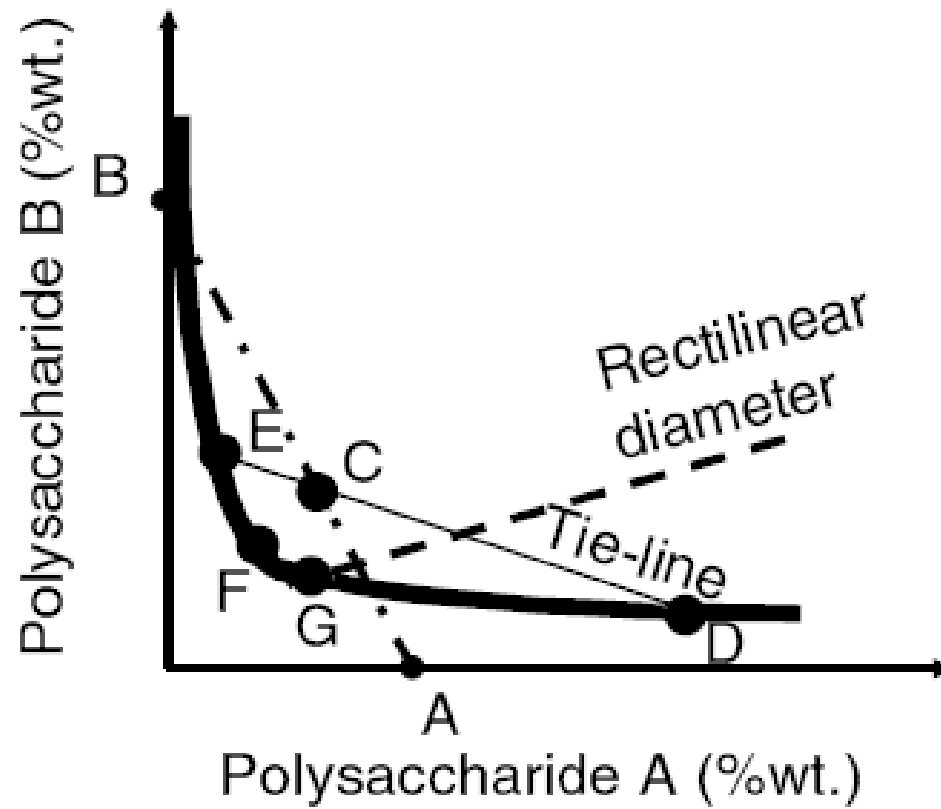
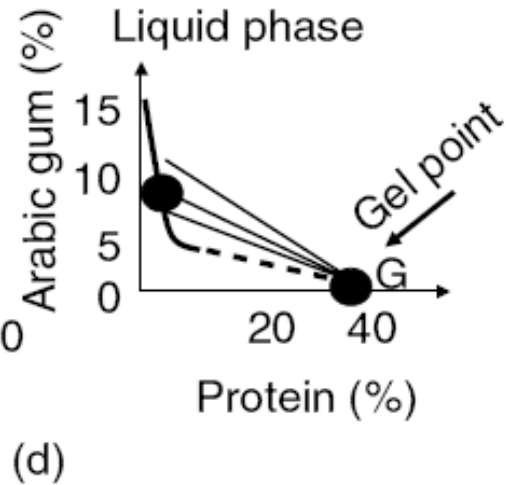
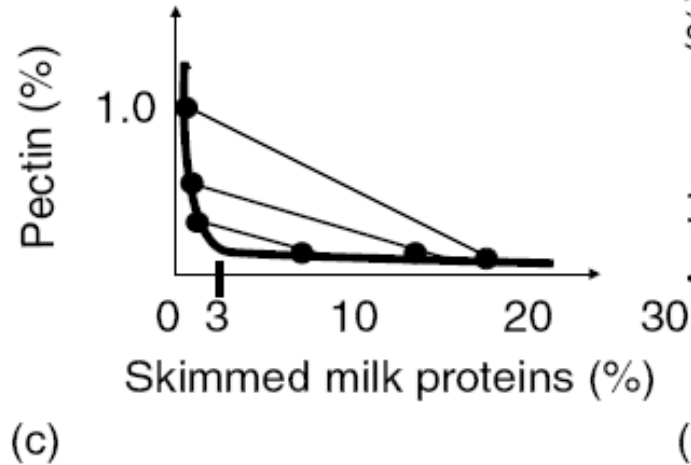
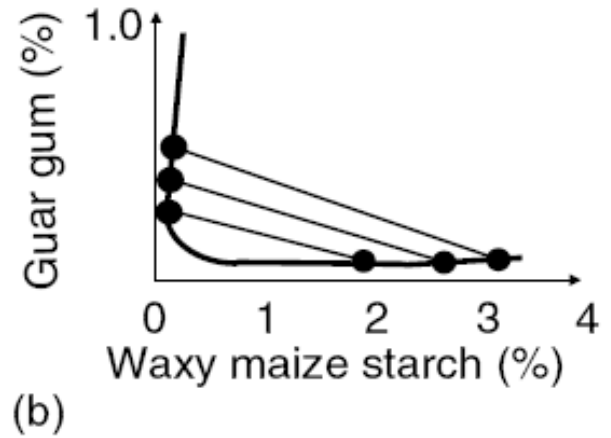
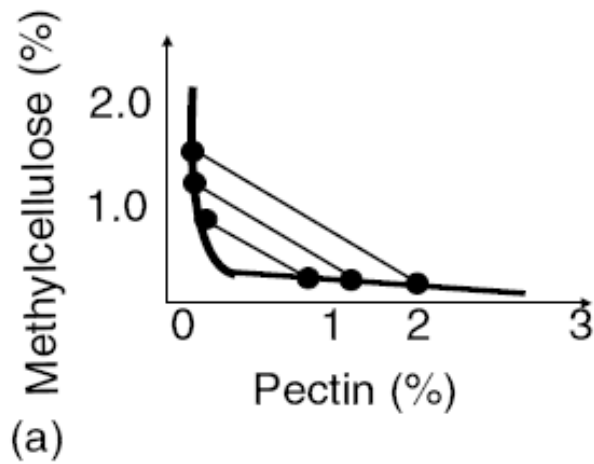


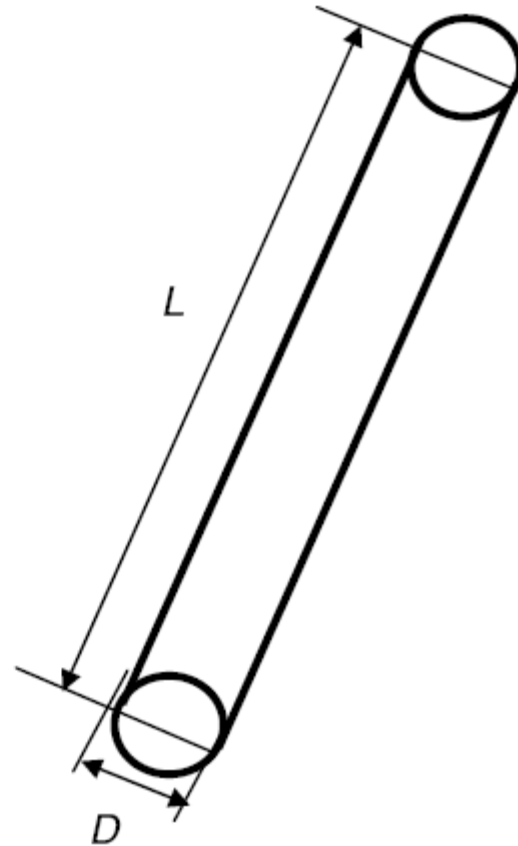
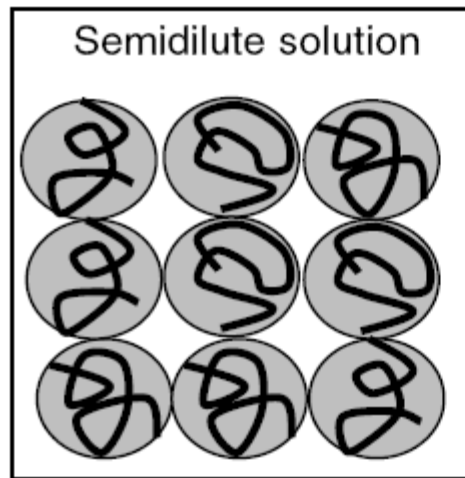
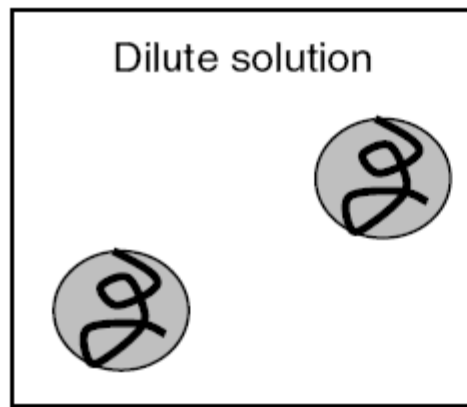
Figure 3. Absorbances of BLG-tragacanth mixture solutions at 50:1 ratio at different pH measured at 650 nm.  $pH_c$ ,  $pH_{\phi_1}$ ,  $pH_{opt}$  and  $pH_{\phi_2}$  are 5.7, 5.3, 5 and 3.5, respectively.



Phase diagram typical of polysaccharide-polysaccharide mixed solution



Phase diagrams for: (a) Methylcellulose–pectin., (b) Guar gum–waxy maize starch.) (c) Pectin–skimmed milk proteins. (d) Arabic gum–skimmed milk proteins.



**Schematic presentation of excluded volume of macromolecular chains**