

Table 1. Stating the diffusion exponent values describing drug release mechanisms in correlation with sample geometries.

Diffusion exponent (<i>n</i>)			
Planar	Cylindrical	Spherical	Transport mechanism
0.5	0.45	0.43	Fickian
$0.5 < n < 1$	$0.45 < n < 0.89$	$0.43 < n < 0.85$	Anomalous
1	0.89	0.85	Case II (Swelling)

by the rate of polymer relaxation occurring as solvent imbibes the system. The boundary between the polymer and solvent begins to transition from a glassy solid state, in which the drug molecules are immobile, to that of a rubbery more flexible state permitting diffusion of entrapped molecules. As relaxation occurs drug can begin to diffuse towards the external media. This process is illustrated in Fig. 3, comparing the stationary boundary present in diffusion dominant systems, with that of the moving boundary present in swellable polymers.

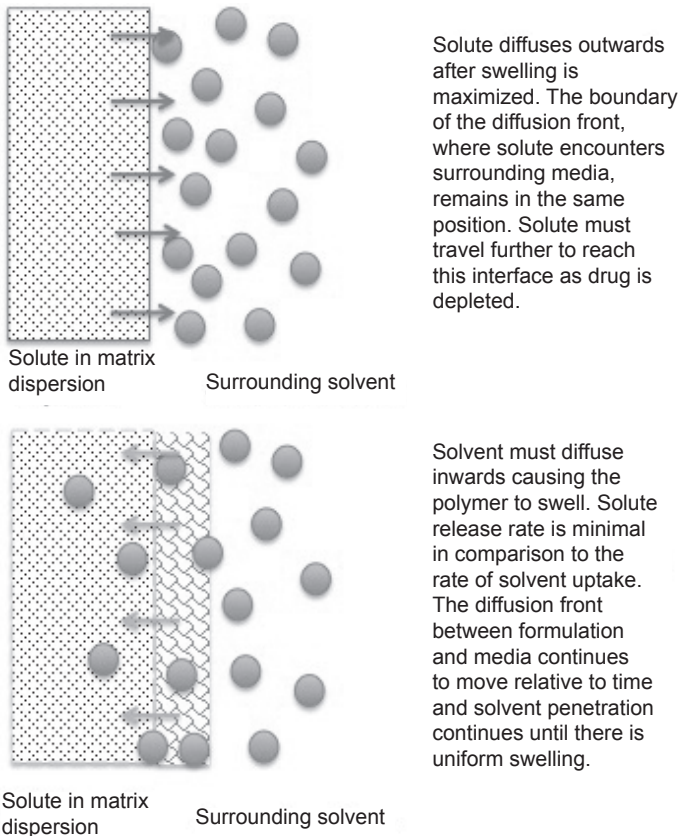


Fig. 3. Stationary boundary in diffusion controlled swellable devices compared with the moving boundary present in swelling controlled devices (Lee 2011).