

300b Micromechanical Properties of Model Intragranular Bridges of Pharmaceutical Excipients

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The formation of large dry granules from fine powdery materials in wet-granulation is quite complex but an accepted view holds that the liquid solution wets and spreads in the interstices between primary particles, forming liquid bridges containing dissolved solids that subsequently dry. Upon drying, these bridges exhibit intricate patterns of crystallization that are both time and composition dependent. This behavior imparts complex morphology to the drying bridge as well as time dependent strength to the forming dry granule. The questions discussed during this presentation are (i) what kind of solid bridge will actually form inside the granule as liquid evaporates, (ii) what will characterize its strength and (iii) where will it break when subjected to a mechanical load?