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Functionality improvement of APIs: An important aspect in tablet manufacturing for oral targeting

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Most APIs are crystalline solids at room temperature and are commonly delivered as a solid oral dosage forms. The efficacy of the drug is often dependent on the physical properties of the dosage form, and it is well established that the different solid forms of the same compound have different physical and chemical properties.

Flow and compatibility of particles or powder are the most important consideration in the solid dosage manufacture. Blending, transfer, storage feeding, compaction, and fluidization, all depends on good powder flow property. The properties include particle size, particle distribution, particle shape, specific surface area, true density, tensile strength, melting form, and polymorphic form. From these fundamental properties arises the other property such as solubility, dissolution rate, flowability, and compactibility. Particle engineering/design techniques are widely used in pharmaceutical industries to modify properties of pharmaceuticals. Especially, improvement in the efficiency of the manufacturing process and high degree of particle functionality can be achieved by these techniques. Improvement in the extent and rate of dissolution of poorly soluble drugs is highly desirable which can lead to an increased and more reproducible oral bioavailability and subsequently to clinically relevant dose reduction and more reliable therapy.

Biography

Mihir Raval is Head of Department of Pharmaceutical Sciences of Saurashtra University (Accredited Grade "A" by NAAC) at Rajkot, in the state of Gujarat (India). Apart from Pharmacy, he is heading Department of Biochemistry of the same university. He is a Dean of Pharmacy Faculty and a Senate member of the University. He is also serving as Director of Industry Institute Interaction Cell (IIIC) of the Saurashtra University. He has served as a resource person in many national level conferences. He has more than 40 publications in various reputed national and international journals to his credit. He has also worked as Production scientist in Pharma industry.

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