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Tracking of macro behavior of pharmaceutical granules subjected to uniaxial compression

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Pharmaceutical granules are very complicated heterogeneous systems consisting of discrete particulates having wide range of physical characteristics disseminated in the surrounded air voids. Granules and powders compression process in pharmaceutical industry consist of four to five consequent stages of phases. Recently, there are significant developments in numerous qualitative and quantitative experimental and numerical methods to probe the internal profile structure changes of powders and granular beds under certain external loads, but they are very expensive and required high technology. Simple coloring of pharmaceutical granules has been developed and adapted in this research project to investigate the macrobehavior of freely flowing pharmaceutical granules (420-800 μm) within confined die geometry. The granules fill to the die in multiple layers to visualize the changes in bed density. The results indicate that the die wall has limited influence of the early stage of the compression cycle and the granules layers compressed in homogenous manner. Increment of loading shows non-homogenous distribution of the colored layers and the lower layer shows the minimal density changes. The interface of the layers shows considerable diffusion of the colored granules.

Biography

Saleh Mohammed Alamri has completed his Master's degree of Pharmaceutical Biotechnology from De Montfort University, UK. Presently, he is working as an Assistant Director of Pharmacy and Material Management and a part time Researcher in Prince Sultan Military Medical City, KSA. He has presented his work in national and international scientific conferences and meetings.

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