

16<sup>th</sup> International Conference and Exhibition on

# PHARMACEUTICS & NOVEL DRUG DELIVERY SYSTEMS

March 19-21, 2018 | Berlin, Germany

## Monitoring effects of uniaxial compression on pharmaceutical granules

**Saleh Mohammed Saeed Alamri**

Prince Sultan Military Medical City, Saudi Arabia

The structure of pharmaceutical granules is highly complex, with a morphology combining discrete solid, but physically variable particles, separated by air pores of various dimensions. The compression procedure for both granules and powders within the pharmaceutical industry is a process represented by four or five steps. Modern advances in various qualitative and quantitative techniques examining the internal morphological changes within powders and granules under subject to various compression loadings have been reported. However, such techniques tend to be costly, demanding significant expertise and highly specialised equipment. As an alternative, this research project has investigated the potential for simple colouring of pharmaceutical granules to monitor free-flowing, solid-state pharmaceutical substrates (i.e., powders or granules with dimensions of 420-800  $\mu\text{m}$  within confined die geometry. This technique permits visualisation of granule behaviour and determination of bed density as granules are permitted to fill the die in multiple strata. Results demonstrate that the die wall has only a minor influence at the commencement of the compression cycle, where granules layers become homogeneously compressed. Gradual increased loading subsequently demonstrates a more heterogeneous distribution of coloured layers, where the base layer is shown to exhibit the least density changes. The liminal layer areas exhibit significant coloured granule diffusion.

### Biography

Saleh Mohammed Saeed Alamri completed his Master's degree of Pharmaceutical Biotechnology from De Montfort University, UK in 2014. He is working as an Assistant Director Pharmacy of Material Management in Prince Sultan Military Medical City, KSA. He presented his work in national and international scientific conferences and meetings.

musab999@yahoo.com

### Notes: