



Topical Research Meeting on Physics in Food Manufacturing

Session: Facilities

Processing of particles and powders in food manufacturing – challenges in packaging and filling line

I Sebastine¹, R Ahmad¹, A Jackson¹, D Smith² and A White¹

¹Centre For Process Innovation, UK, ²DJS Process Consulting Ltd, UK

The success of any formulated product is not only dependent upon its formulation but also the packaging within which it is sold. Handling and processing of food powders and particles pose many challenges in food manufacturing. The food industry is heavily reliant on packaging as both the means to present the product to the consumer and as the method of providing protection to the product between manufacture and end use. The powder products industry tends to rely on past experience and/or trial and error with regards to process scale up. The performance of a packing line process is a function of the equipment /process design, the physical properties of the product & the process control strategy employed. Currently a major industrial capability gap in that the behaviour of new formulations is not known until a new product moves to full scale production trials. A pilot scale research facility with a very broad applicability based upon common powder handling and dosing equipment is being set up at the National formulation Centre. This facility would enable to understand the behaviour of new powder and complex particle formulations. The facility could be used by clients to make test runs with new products & packages creating representative packed samples for consumer testing, ship testing or other technical tests. The proposed level of state of the art instrumentation will enable a seamless integration with Particle modelling activities. The measurement technology is portable and may be used at client facilities for final scale up validation activities.