

# Optimization analysis on spiral blade distributor via design of experiment (DOE) in fluidization system

## **Abstract**

Nowadays, research using optimization method has gained a place in the research world. Applying in fluidization process due to determine the appropriate processing parameter setting was very lack on fluidization publication. By using Design of Experiment (DOE), it was able to analyze the data from simulation result to propose a new optimum design of spiral blade distributor. In order to determine the appropriate parameter setting, the application of optimization via full factorial design (FFD) method work to improve the parameter such as; (i) pitch length and (ii) inclination angle towards on uniform velocity distribution especially on tangential velocity and low pressure drop. Based on the statistical analysis results, the mean tangential velocity does not show a performance contribution via those parameter. However, the pressure drop results shows a significant correlation by increasing the performance of fluidization systems.