

## **Investigations of sieving performance in a granular system using sieve shaker experiments**

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### **Summary**

Sieve shaker is widely used in industrial and experimental processes for sieving granular material. With simply mechanical motion and convenient replacement of sieves, sieve shaker is also an appropriate device to be employed for the research of particle sieving. This study uses an experimental system of sieve shaker which can measure the sieving efficiency in real time to investigate the sieving performance of granular material. Two kinds of glass bead with different diameters, 1 mm and 5 mm, are used as the granular material to explore the influences of vibrating condition, size of mesh hole and thickness of granular layer on sieving. The experimental results show that the sieving efficiency varies with the sieving time in an exponential relation. The sieving rate, an important index of sieving performance, can be estimated from the regressive analysis. This study explores the optimum vibrating amplitude and optimum size of mesh hole to gain the fastest sieving rate under different conditions. In addition, the role of the thickness of granular layer in the sieving effect is also discussed in detail.

