

PACKAGE GENERATOR

This module is used to generate packings of spherical particles in a set of specific subvolumes. In *Fig. 1* some examples of various particle packings are illustrated.

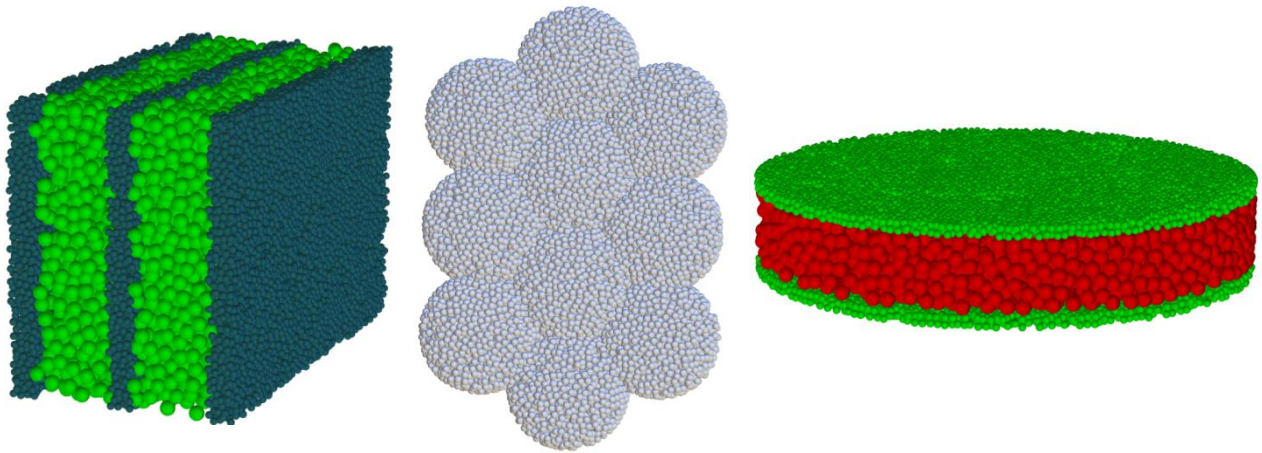


Figure 1. Examples of generated packings.

User can specify particle packings which can be generated into previously defined analysis volumes (see geometries editor). For each subvolume following parameters should be specified:

- mixture type (more info in materials database)
- packing porosity (density) which should be reached in this subvolume. **Note!** This porosity is used only to approximate the number of particles which will be generated in the volume. Due to the influence of border the porosity in the border regions can be larger.
- maximal allowed overlap of particles in this subvolume
- maximal number of iterations (can be changed even during generation)
- initial translational velocity of particles in this volume

The generation based on the force-biased algorithm. In the first iteration of the algorithm particles are randomly generated in the specific volume. Afterwards, iterative rearrangement of particles occurs. The algorithm stops when the maximal overlap between particles in the system is smaller than specified limit, or when the number of iteration is larger than the number specified by user. The number of particles which should be generated is calculated based on the packing porosity.