



# Grain Column Analysis

As part of research and communication projects, the *Gaches Chimie* water treatment team conducted a quality assessment of their GAROfiltre product, a filter medium composed of granular polished glass.

The objective is to highlight its filtration potential compared to the usual media, sand.

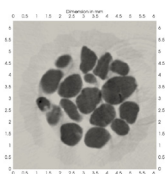
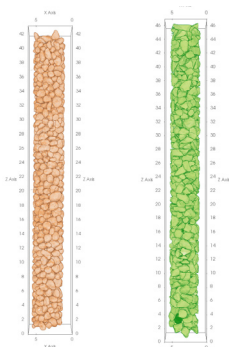
## Customer's needs

The team wants to characterize the physical properties of a GAROfiltre and a sand sample, each one placed in a PVC column.

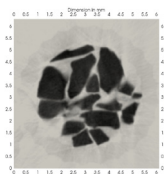
A settling of the columns is carried out according to a well-defined protocol, implying a rearrangement of the grains and thus of the space between the grains. It is this space, and in particular the chemical exchange surfaces between the grains and the fluid flowing in the media, that conditions the filtration potential.

### 3D Volumes

### 2D Slices



Sand



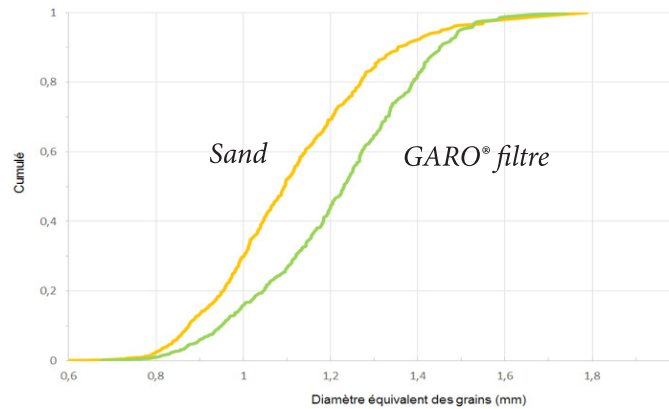
GAROfiltre



Sand GAROfiltre

## Voxaya's analysis

Characteristics	GAROfiltre	Sand
Number of grains	444	608
Intergranular porosity	52%	46%
Mean grain volume	0.8 mm <sup>3</sup>	0.6 mm <sup>3</sup>
Reactivity surface	2324 mm <sup>2</sup>	2284 mm <sup>2</sup>
Sphericity ratio	0.78	0.90



Gronulometric distributions

## Customer's benefits

### Faster results

One day was enough for the acquisition, processing and analysis of 3D images.

### Statistical and visual analysis

Comparative analysis of the physical properties (sphericity volume of each grain, density, porosity) of both sample.

### Communication tool

These results highlighted the advantages of the GAROfiltre product and were used for communication on trade shows.

