

WORKGROUP FOR MULTIPHAS FLOWS

Deep bed filtration in porous structures

Grant number

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Project title

Deep bed filtration in porous media

Project leader

Prof. Dr.-Ing. habil. Martin Sommerfeld and Dr. (PhD) Stefan Horender

Realized by

Dipl.-Math. Helmut Schomburg, Robert Bosch GmbH

Keywords

Lattice-Boltzmann method, Euler-Lagrange, filtration, numerical evaluation

Short description of the project

The intention of the project is to simulate the filtration of a particle-laden flow in a porous media. The particles are assumed to be spherical and submicron.

Particles deposit in the porous media during the filtration. Thereby the particle layer increases with proceeding time and this particle layer causes a change of the gas flow. One aim of the project is to understand the interaction between gas flow and particle layer.

In order to implement the gas phase flow, the Lattice-Boltzmann method is used. Furthermore the motion of the particles is treated by Euler-Lagrangian approach, which include solving an ordinary differential equation.