Abstract

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department of:	Pharmaceutical Technology
Consultant:	Assoc. Prof. PharmDr. Zdeňka Šklubalová, PhD.
Student:	Simona Dvořáčková
Title of Thesis:	Fractal aspects of sodium chloride flow

The flowability of substances is affected by their granulometric characteristics, such as the size and the shape. In this thesis, the relations between particle size and flow rate of the sodium chloride size fractions in a range of 80–630 μm through the circular outlet of the conical stainless hopper in a range of 6–15 mm are studied. The Jones & Pilpel power equation was used to model the dependence. A linear relationship between the exponent of the Jones & Pilpel power equation and the mean size of particles was noted. The fractal aspects of flow rate (the mass and/or the volume ones) were investigated using the results of the optical microscopy. A nonlinear dependence between the flow rate and the mean particle size and/or the particle perimeter was detected.