

WORKGROUP FOR MULTIPHASE FLOWS

Surface analysis

The determination of the specific surface and the porosity of solids supplies an important characteristic quantity for the characterisation of the respective material. Numerous operative properties of such materials as adsorbents, catalysts, ceramic and pharmaceutical products, of pigments and filling materials are connected in different ways with the available surface of the materials.

The method of gas adsorption proves to be an efficient instrument for the determination of the surface accessible from outside. Most solids have a porous surface, so that their determination by means of the measured mass of adsorbed gas supplies a measured variable relevant for many different questions.

With the measuring method either the complete adsorption and desorption isotherm are determined, what enables a versatile evaluation of the analysis values, or with fewer instrumentation expenditure, as for example in the BET-procedure (DIN 6613) the specific surface is measured.

The in-house measuring instrument ASAP 2000 of the company micromeritics (USA) enables adsorption measurements according to a volumetric principle with the gases nitrogen, argon and krypton at temperatures of the liquid nitrogen.

The investigations can be carried out for powders, granulated materials and compact samples with a dimension of < 10 mm and an absolute total surface of > 5 m².