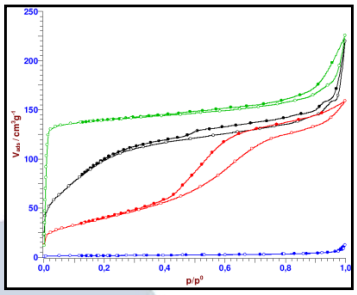
Characterization of the solid samples using the gas sorption method

We offer contract measurement:



- physisorption measurement for the specific surface area determination with the determination of the micro- and mesopores widths of the porous materials (sorption gas N_2),
- detailed physisorption analyses (N_2, Kr) for characterization of the samples with very high and also extremely low surface area,
- chemisorption measurements for characterization of the sample surfaces, e.g. catalysts, including the determination of the active places area, the size of the crystallites and their dispersion, sorption capacity, activation energies etc. using diverse gases (N_2, Ar, H_2, CO, CO_2, CH_4, atd.),

- analyses using TCD methodologies – temperature programmable analyses TPR/TPD/TPO (reduction, desorption oxidation) up to the temperature 1100 °C (analyser is also equipped with flow controller),
- check of the results by measuring the reference samples.

Measuring parameters

- specific surface area
  - from 0,2 m^2g^{-1} (nitrogen)
  - from 0,005 m^2g^{-1} (crypton)
  - measuring error 2-3 %
- pores volume: from 0,0001 cm^3g^{-1}
- minimum pores width: from 0,35 nm (nitrogen)
- sample preparation: outgassing (vacuuming), heating up to 450 °C

Quantachrome INSTRUMENTS	ThermoFinnigan
autosorb iQ	Sorptomatic 1990

Contact for technical communication: RNDr. Jiří Pechoušek, Ph.D.,
@ jiri.pechousek@upol.cz
✉ Šlechtitelů 11, 77900 Olomouc
☎ 58 563 4949

Contact for business communication: Doc. RNDr. Libor Machala, Ph.D.,
@ libor.machala@upol.cz
✉ Šlechtitelů 11, 77900 Olomouc
☎ 58 563 4959