

Analysis of Physisorption Data

In the Excel files (from left to right), you will find:

- A summary of the results, with surface area calculated with BET and Langmuir methods and the BJH cumulative pore volume (in adsorption and desorption)
- The raw data reported with time of analysis (Isotherm Tabular Report)
- The two branches of the physisorption isotherm (Isotherm Linear Plot): plot them in an XY graph and comment the type of isotherm and the type of hysteresis on the bases of IUPAC recommendation.
- The data analysed following the BET and the Langmuir models (BET Tabular Report and Langmuir Tabular Report): plot the two graphs, calculate the straight line to fit the data and discuss which model fits better the experimental results. On the basis of this, assign the surface area of the material on the basis of the better model.
- The data regarding pore size distribution from both adsorption and desorption branches: plot $dV/d(\log D)$ vs Average Pore Diameter (in logarithmic scale) and comment about size of pores related with the shape of physisorption isotherm and about differences between size distribution obtained for the 2 branches.

Repeat this process for the sample prepared by your group and for another sample prepared with different catalyst.

Analysis of UV-vis Data

Refer to instructions given with the synthetic procedure for UV-vis spectra analysis.

Analysis of TEM Data

Download and install the program ImageJ (<https://imagej.net/ij/>). Check the tutorial video on Moodle and measure the size of a large number of particles from the TEM images of the sample Au-Ag with GMF = 0.50. Present the size distribution of nanoparticles and comment.