The plan for the polystyrene / toluene experiment on the HFBS

Note that the sample preparation with require:

1 g of PS-d8

1 g of PS-d3

1 g of PS-d5

1 g of PS

At least 3 mL (better more, depending on the cost) of toluene-d8

At least 1 ml (better more, depending on the cost) of toluene-d3 (d3 is needed to suppress the methyl group signal from toluene)

Each of the 4 combinations described below will be split into 3 samples (to make a total number of samples 12): the “dry”, the “dried and then saturated from toluene vapors to the maximum load achievable”, and the “dried and then saturated from toluene vapors to the maximum load achievable and then with half of the adsorbed toluene removed through open air exposure”.

Combination 1 to study the adsorbed toluene: PS-d8/touene-d3 (3 samples)

Combination2 to study the rings: PS-d3/toluene-d8 (3 samples)

Combination 3 to study the backbone: PS-d5/toluene-d8 (3 samples)

Combination 4 to study the entire matrix: PS-all-h/toluene-d8 (3 samples)

For each of the 12 samples, the HFBS elastic intensity scans could be set up as follows. Cooling down to the baseline temperature (ca. 3.5 hours). From the baseline temperature to 298 K ramping at 1.5 K/min taking the data every minute (ca. 3.5 hours). From 298 K to 358 K ramping at 0.3 K/min taking the data every 5 minutes (ca 3.5 hours). Altogether, it should be about 11 hours per sample, or 12 hours including the sample change. Hence 12 samples in 6 days.