

Hand in problem 1

In order to study the dynamics in a supercooled liquid you have performed a photon correlation spectroscopy (PCS) experiment. From the experiment you are able to determine the relaxation time as a function of temperature for the liquid. In table 1 the results from the experiment are given. With the help of this data:

- a) Determine the glass transition temperature and discuss if this is a strong or a fragile liquid
- b) Estimate the viscosity at room temperature.

Carefully motivate your answers and steps to reach the solution!

Hand in not later than 21/9 13.00 to Aleksandar Matic either by email as a pdf (matic@chalmers.se) or on paper at the start of the lecture.

Table 1 Data from the PCS-experiment

Temp (K)	τ (s)
191.3	465.856
195.9	12.5318
199.5	1.18223
202.4	0.223467
203.8	0.106625
206.5	0.0283841
210.9	0.00422275
215.2	0.000841062
219.9	0.000180923
225.7	3.53346e-05
230.9	9.97123e-06