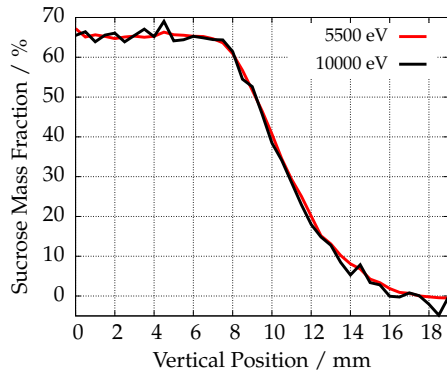**(a)** Calculated transmittance

(b) Calibrated sucrose concentration

Figure 4.3 | X-ray transmittance as a function of the photon energy. a) Calculated transmittances (Henke *et al.*, 1993) of an empty capillary, water and an aqueous sucrose mixture with 65 % mass fraction assuming a 1 mm sample thickness and the nominal specifications of the glass capillary. The ratio between the water and the sucrose mixture transmittances is shown in the right axis. b) Sucrose mass fraction derived from an experimental transmittance measurement of a 65 % sucrose density gradient measured at two different energies under similar experimental conditions. The absorbance differences are smaller for the higher energy.