Electronic supplementary information

Mercury thioarsenate glasses: a hybrid chain/pyramidal network

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Table S1 Conductivity parameters for the HgS-As_2S_3 glasses: the room-temperature conductivity σ_{298}, the activation energy E_σ, and the pre-exponential factor σ_0

HgS concentration (mol.%)	log σ_{298} (S cm^{-1})	E_σ (eV)	log σ_0 (S cm^{-1} K)
10	-15.41 (2)	0.972 (10)	3.45 (12)
20	-15.74 (6)	1.081 (20)	4.95 (24)
30	-16.56 (3)	1.184 (10)	5.86 (12)
40	-16.12 (5)	1.105 (15)	4.99 (18)
50*	-15.65 (4)	1.051 (14)	4.54 (18)

Uncertainties in the last digit(s) of the parameter are given in parentheses

* glassy/crystalline sample

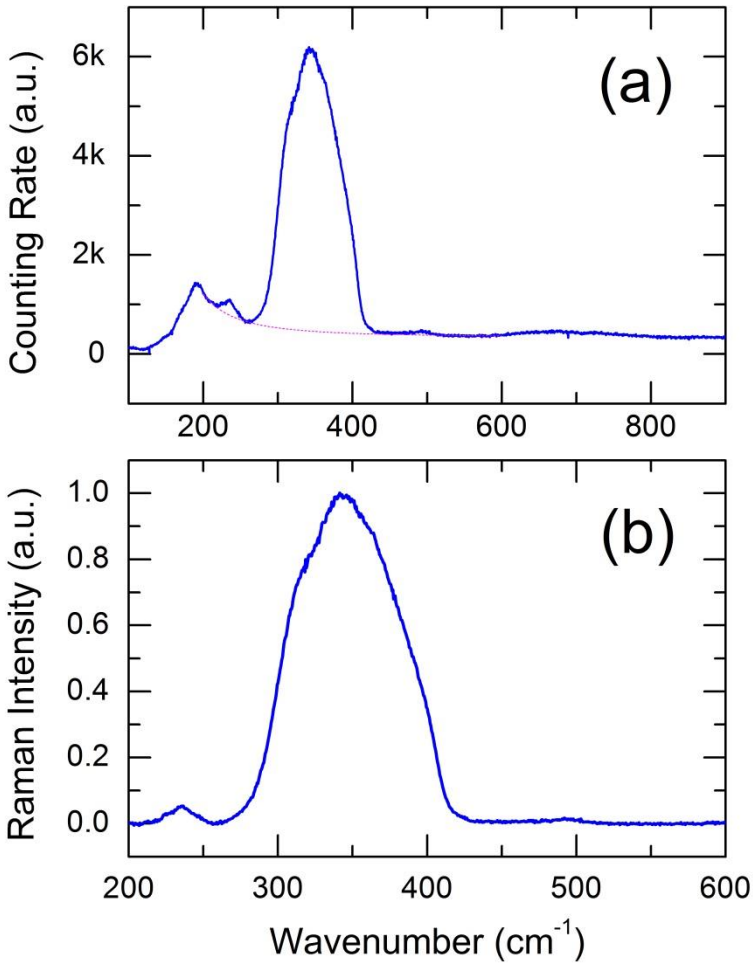
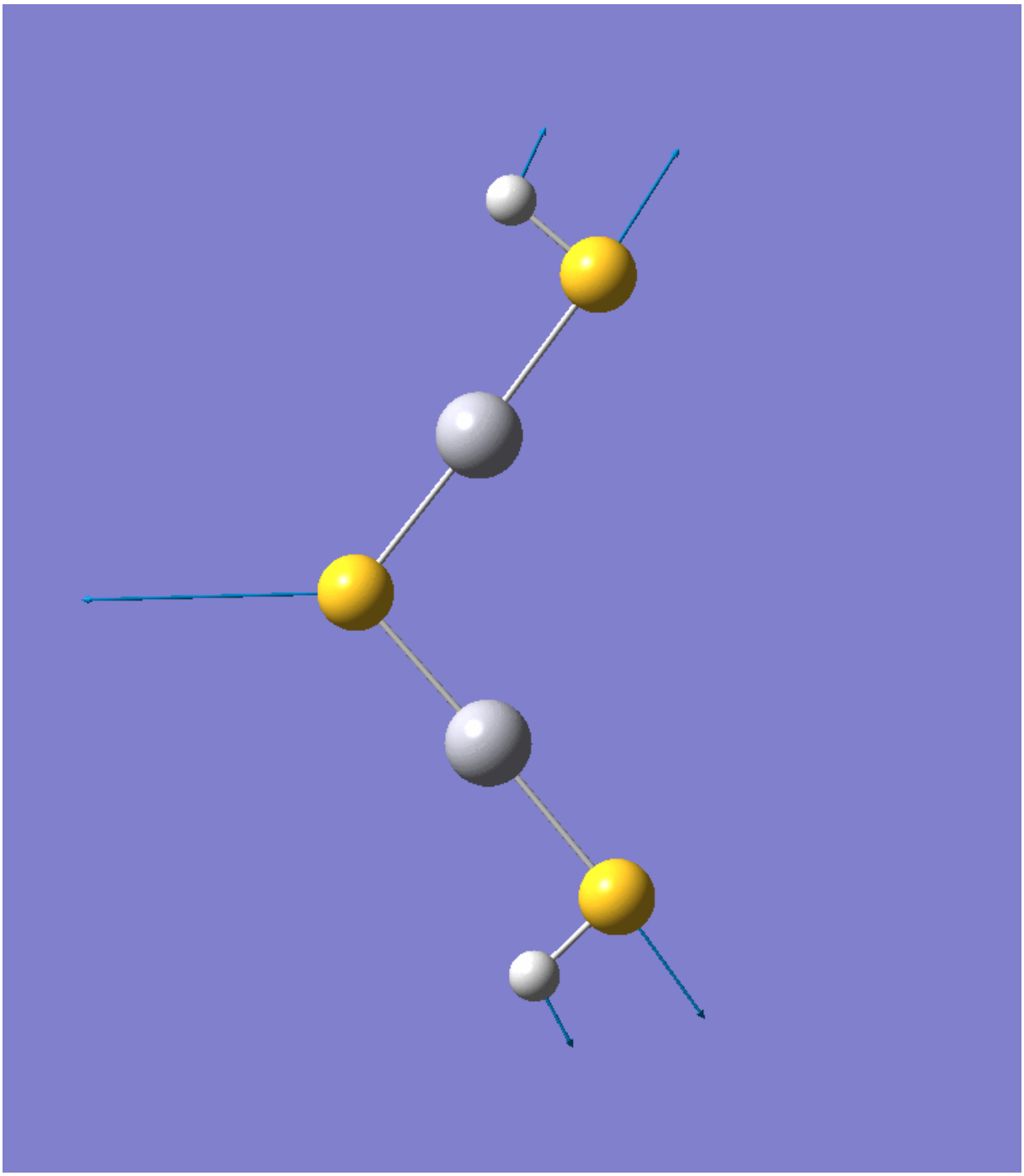


Fig. S1 (a) Typical raw Raman spectra of the $(HgS)_x(As_2S_3)_{1-x}$ glasses taking the x = 0.1 sample as an example. The spectral background over the 200-600 cm^{-1} range was approximated by a Voigt function (dashed line). (b) The resulting Raman spectrum for the x = 0.1 glass after background subtraction and normalisation to the most intense spectral feature at 340 cm^{-1}.

Supplementary movies

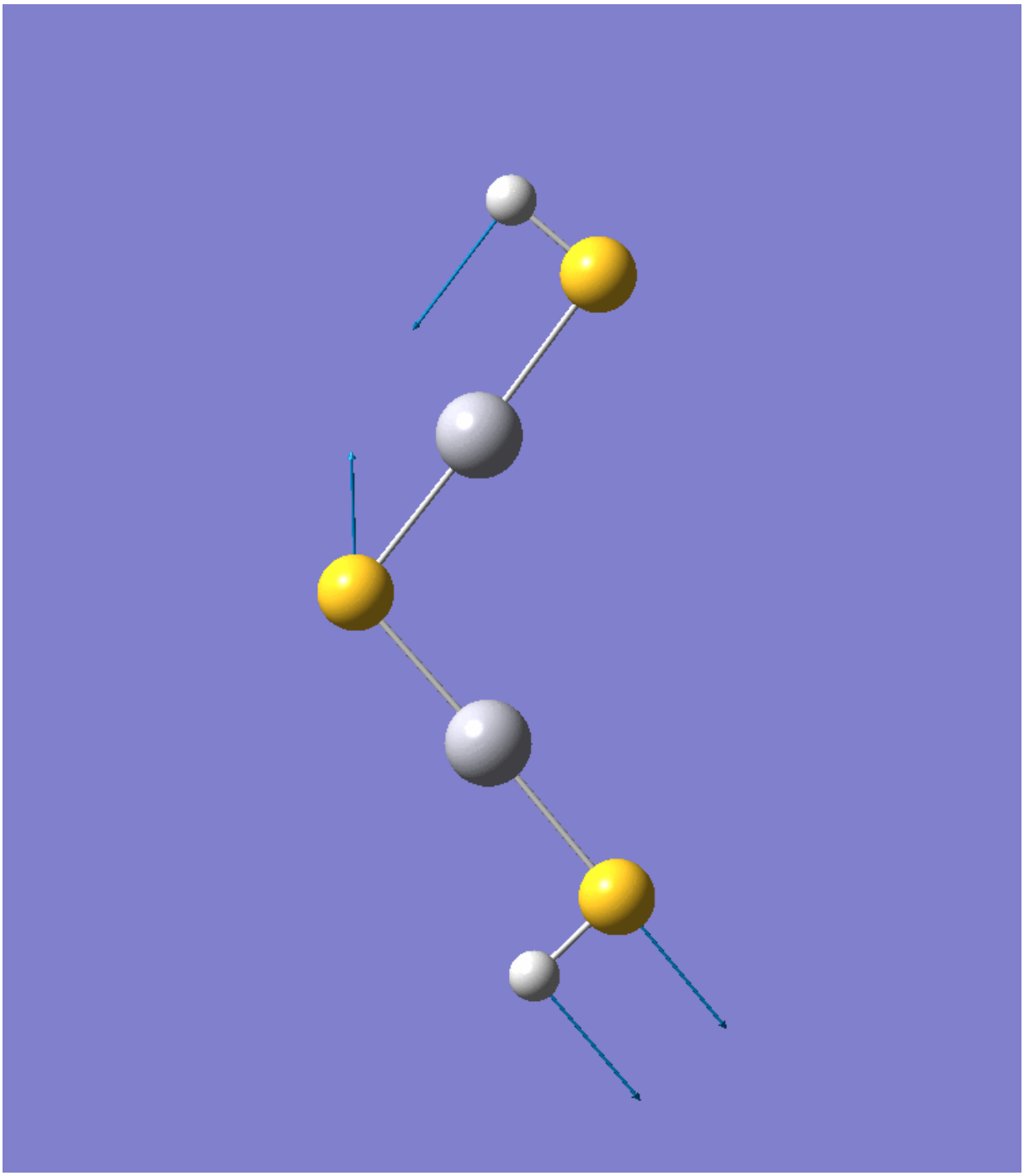
Supplementary movie SM1

Symmetric in-phase Hg-S stretching in $Hg_2S_3H_2$ oligomer at 306 cm^{-1}



Supplementary movie SM2

Symmetric out-of-phase Hg-S stretching in $Hg_2S_3H_2$ oligomer at 325 cm^{-1}



Supplementary movie SM3

Asymmetric in-phase Hg-S stretching in $Hg_2S_3H_2$ oligomer at 355 cm^{-1}