



Figure S1 B) Raman spectra of the NS4 + 17.6 mol% H<sub>2</sub>O glass. B) Baseline-subtracted spectrum. Peaks at ~490 and ~1100 cm<sup>-1</sup> results from intertetrahedral bending and intratetrahedral stretching of SiO<sub>4</sub> units respectively, while the ~800 cm<sup>-1</sup> band results from SiO<sub>4</sub> rocking motions. The sharp band near 1630 cm<sup>-1</sup> results from H<sub>2</sub>Omol bending, and the 2300, 2800 and 3600 cm<sup>-1</sup> bands results from OH stretching in OH and H<sub>2</sub>Omol units in the glass (Zotov & Keppler, 1998). See also Le Losq et al. (2012), Le Losq et al. (2014) and references therein for details on Raman spectra of anhydrous and hydrous glasses. The spectrum presented in B) is used for measuring the area of the signal assigned to OH stretching (in red). Intensities of the spectrum have been previously normalized to the total area of the spectrum, which is now equal to 1 (theoretical value of the sum of the vibrational density of state).