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Influence of water on the high-pressure behavior of silica glass

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In this study, we have investigated the influence of high-pressure on the structure of hydrous SiO₂ glass by a combination of high-pressure Raman spectroscopy and X-ray Raman scattering (XRS) measurements. Previous data of anhydrous SiO₂ glass serve as a reference. A detailed analysis of the SiO₂ network of both compounds is provided. Moreover, we discuss the role of water in the glass structure of anhydrous SiO₂. Our results imply that the water may play a key role in the melting processes.

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