Characterization of photoionized SiO2 aerogel plasmas created by radiation fields in gold hohlraum targets

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The photoionized SiO2 aerogel plasmas generated under a near-Planckian radiation field in gold hohlraum targets irradiated by high power laser pulses are measured by observing the absorption spectra and line emissions in the range between 0.64 and 0.74 nm. The experimental results are simulated by theoretical calculations under local thermodynamic equilibrium (LTE) using a detailed-level-accounting (DLA) model. The contributions of different Si ions to the specific components of the measured absorption spectra are identified.

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