Supplemental Materials

Preparation, properties, and photodoping behavior of GeS2, Ga2S3, and Sb2S3-based glasses with excess sulfur and CsCl

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Supplemental information contains nine additional figures.



FIG. S1. Raman spectra for the glasses based on GeS2-Sb2S3 system. Reduced Raman spectra as shown in Fig. 1 were obtained from these spectra by correcting the thermal population effect using eq. (1) in the text.



FIG. S2. Absorption spectra of 80Ge-20Sb glass and glasses with excess sulfur and CsCl showing variation in absorption edge with the incorporation of excess sulfur and CsCl. The symbols (squares, circles, and triangles) are only to distinguish the lines each other.

FIG. S3. Absorption spectra of 80Ge-20Sb-40S and 80Ge-20Ga-40S glasses and 80Ge-20Ga-40S glasses with incorporation of CsCl, showing difference in absorption edge between GeS2-Sb2S3-based and GeS2-Ga2S3-based glasses and the variation with incorporation of CsCl in the 80Ge-20Ga-40S glass. The symbols (squares, circles, and triangles) are only to distinguish the lines each other.





FIG. S4. Absorption spectra of 80Ge-20Sb-10S and 80Ga-20Sb-10S glasses showing differences in absorption edge. The symbols (squares, circles, and triangles) are only to distinguish the lines each other.



FIG. S5. Evolution of *A* for the 60Ge-40Sb glass and glass with excess sulfur and CsCl. The symbols (squares, circles, and triangles) are the measured data points and lines are only for guide.



FIG. S6. Evolution of *A* vs. square root of time for GeS2-Sb2S3-based glass and glasses with excess sulfur and CsCl. The symbols (squares, circles, and triangles) are the measured data points and lines are only for guide.

FIG. S7. Evolution of *A* vs. square root of time for Ga2S3-Sb2S3-based glass and glasses with excess sulfur and CsCl, compared with GeS2-Sb2S3-based glass. The symbols (squares, circles, and triangles) are the measured data points and lines are only for guide.





FIG. S8. Evolution of *A* vs. square root of time for GeS2-Sb2S3-based and Ga2S3-Sb2S3-based glasses incorporated with CsCl. The symbols (squares and circles) are the measured data points and lines are only for guide.



FIG. S9. Variation in *A* evolution with UV irradiation intensity. The symbols (squares, circles, and triangles) are the measured data points and lines are only for guide.