

## **Remarks on the nature of Urbach absorption tail in glassy semiconductors**

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<https://doi.org/10.1109/SMICND.1995.495045>

### **Abstract**

Exponential absorption edge of chalcogenide glassy alloys with sulfur content in the region of the topological transition is studied. It is shown that the slope of the tail ( $1/\Delta$ ) depends on the mean coordination number ( $\bar{r}$ ), the mean volume occupied by an atom ( $V$ ) and the stoichiometry ( $\Omega$ ) of the materials, i. e.  $\Delta = f(\bar{r}, V, \Omega)$ . Analysis of the experimental results for alloys As-S-Ge as well as for other amorphous materials, including the elemental ones indicates that the topological disorder controlled by  $\bar{r}$ ,  $\Omega$  and  $V$  is the main reason in formation of the exponential absorption tail.

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