Photoconductivity of the single crystals $\text{Pb}_4\text{Ga}_4\text{GeS}_{12}$ and $\text{Pb}_4\text{Ga}_4\text{GeSe}_{12}$

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Existence of $\text{Pb}_4\text{Ga}_4\text{GeS}_{12}$ in the quasi-ternary system (670 K)
Existence of $\text{Pb}_4\text{Ga}_4\text{GeSe}_{12}$ in the quasi-ternary system (670 K)
Phase diagram of the $\text{PbGa}_2\text{S}_4$–$\text{Pb}_2\text{GeS}_4$ system
Phase diagram of the $\text{PbGa}_2\text{Se}_4 - \text{Pb}_2\text{GeSe}_4$ system
Optical absorption spectrum of the Pb$_4$Ga$_4$GeS$_{12}$ single crystal

From the insert, approximated $E_g = 2.28 \text{ eV}$
Optical absorption spectrum of the Pb₄Ga₄GeSe₁₂ single crystal

From the insert, approximated $E_g = 1.86$ eV
Photoconductivity of the Pb$_4$Ga$_4$GeS$_{12}$ single crystal

Peak I – 570 nm (2.17 eV) – intrinsic photoconductivity
Peak II – 1030 nm (1.20 eV) – admixture photoconductivity
Peak II likely corresponds to intrinsic defects $V_s$
Photoconductivity of the Pb$_4$Ga$_4$GeSe$_{12}$ single crystal

- Peak I – 680 nm (1.82 eV) – intrinsic photoconductivity
- Peak II – 1340 nm (0.92 eV) – admixture photoconductivity
- Peak II likely corresponds to intrinsic defects V$_{Se}$
Thank You for attention!

- For additional information:

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