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Temperature dependence of optoelectronic properties of $\text{CdS}_x\text{Se}_{1-x}$, $\text{CdS}_x\text{Te}_{1-x}$, $\text{CdSe}_x\text{Te}_{1-x}$ DONGGUO CHEN, NUGGEHALLI RAVINDRA, New Jersey Institute of Technology — Temperature dependence of the optoelectronic properties of ternary compounds, $\text{CdS}_x\text{Se}_{1-x}$, $\text{CdS}_x\text{Te}_{1-x}$ and $\text{CdSe}_x\text{Te}_{1-x}$, are presented. The analysis of the temperature dependence of the energy gap of these compounds, for various compositions, is discussed in light of the Varshni formula. Extension of this study is then made to include the contributions of the temperature dependence of the gap of the component binary semiconductors. The model takes into account the implications of the above results on the refractive indices of these ternary compound semiconductors.

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