Original paper:

A. R. Beattie, and P.T. Landsberg, Proc. R. Soc. Lond. A, **249**, 16 (1959). **Auger Effect in Semiconductors**

https://doi.org/10.1098/rspa.1959.0003

Application examples of Auger term being used:

B. V. Olson, E. A. Shaner, J. K. Kim, J. F. Klem, S. D. Hawkins, M. E. Flatté, and T. F. Boggess, Appl. Phys. Lett. **103** 052106 (2013). **Identification of dominant recombination mechanisms in narrow-bandgap InAs/InAsSb type-II superlattices and InAsSb alloys**

[http://dx.doi.org/10.1063/1.4817400]

InAs/InAsSb type-II superlattices and InAsSb alloys were measured from 77-300 K.

For type-II superlattices, SRH recombination is the dominant mechanism. 130 meV and 70 meV defect levels were determined for undoped and do

Y. Aytac, B. V. Olson, J. K. Kim, E. A. Shaner, S. D. Hawkins, J. F. Klem, M. E. Flatté, and T. F. Boggess, PRA **5**, 054016 (2016). **Evidence of a Shockley-Read-Hall Defect State Independent of Band-Edge Energy in InAs/In(As,Sb) Type-II Superlattices**

https://doi.org/10.1103/PhysRevApplied.5.054016

FORMULA BEING USED:

$$\tau_{auger} = \frac{2n_i^2}{n_0^2 + n_0 p_0}\tau_{A1}^i$$

$$\tau_{A1}^i = \frac{3.8 \times 10^{-18}\epsilon_\infty^2 (1+\mu)^{1/2}\,(1+2\mu)}{\left(\frac{m_e}{m_0}\right)|F_1F_2|^2} \times \left(\frac{E_g}{k_bT}\right)^{3/2} \exp\left(\frac{1+2\mu}{1+\mu}\frac{E_g}{k_bT}\right)$$

$$\mu = \begin{cases} \frac{m_e}{m_\mathrm{h}},\ m_\mathrm{h} > m_e\ and\ for\ n-type\ samples\ up\ to\ moderately\ p-type \\ \frac{m_\mathrm{h}}{me},\ m_e > m_\mathrm{h}\ \text{ for p} - \text{type samples} \end{cases}$$

$$\epsilon_\infty^2 - \quad static\ dielectric\ constant\ below\ the\ absorption\ edge$$