

Abstract Submitted  
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**Compton Effect and Pair Production and Annihilation Formulas  
Should Include Spin and Vibrational Energy Factors** STEWART BREKKE<sup>1</sup>,  
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should spin and vibrational energies before and after the photon collision:  $hf_1 + mc^2 + 1/2I\omega_{1r}^2 + (n+1/2)\hbar\omega_{1v} = hf_2 + (p_e c)^2 + (mc^2)^{2^{1/2}} + 1/2I\omega_{2r}^2 + (n+1/2)\hbar\omega_{2v}$ .  
The pair annihilation formula should be  $2hf = m_+c^2 + m_-c^2 + 1/2I\omega_{+r}^2 + (n+1/2)\hbar\omega_{+v} + 1/2I\omega_{-r}^2 + (n+1/2)\hbar\omega_{-v}$ . In pair creation the photon energy must  
also go to the vibrational and spin kinetic energies besides linear kinetic energies of  
the created particles. By using the vibrational and and spin kinetic energies some  
reconciliation between theoretical and experimental values may be achieved.

<sup>1</sup>previous papers presented on subject

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