Paper 3:

- free electron mass: $m_0$
- initially at rest
- maximum recoil energy

Kinetic energy of the electron: $E_k$

\[ E_k = E' - \frac{\hbar}{nc} \sin^2 \theta/2 \]

we want $\lambda' - \lambda$ to be maximized,
so that $\theta$ happen when

\[ \sin \theta/2 = 1 \Rightarrow \sin \theta/2 = \pm 1 \]

$\theta/2 = n\pi/2$

$\theta = n\pi$ where $n = 1, 2, 3, \ldots$