

$$\chi^{(2)}(\Omega, \omega, \Omega - \omega) = \begin{bmatrix} 0 & 0 & 0 & 0 & \chi_{15}^{(2)}(\Omega, \omega, \Omega - \omega) & -\chi_{22}^{(2)}(\Omega, \omega, \Omega - \omega) \\ -\chi_{22}^{(2)}(\Omega, \omega, \Omega - \omega) & \chi_{22}^{(2)}(\Omega, \omega, \Omega - \omega) & 0 & \chi_{15}^{(2)}(\Omega, \omega, \Omega - \omega) & 0 & 0 \\ \chi_{15}^{(2)}(\Omega, \omega, \Omega - \omega) & \chi_{15}^{(2)}(\Omega, \omega, \Omega - \omega) & \chi_{33}^{(2)}(\Omega, \omega, \Omega - \omega) & 0 & 0 & 0 \end{bmatrix}$$

$$P_x^{(2)}(\omega) = +2\varepsilon_0 \int_{-\infty}^{+\infty} \chi_{15}^{(2)}(\omega; \Omega, \omega - \Omega) E_x(\Omega) E_z(\omega - \Omega) d\Omega - 2\varepsilon_0 \int_{-\infty}^{+\infty} \chi_{22}^{(2)}(\omega; \Omega, \omega - \Omega) E_x(\Omega) E_y(\omega - \Omega) d\Omega$$

- 泵浦 均沿 x 轴 传播:  $E_x = 0$
- $P_x^{(2)}(\omega) = 0$

$$d_{u_1 u_{23}} = \begin{bmatrix} 0 & 0 & 0 & 0 & d_{15} & -d_{22} \\ -d_{22} & d_{22} & 0 & d_{15} & 0 & 0 \\ d_{31} & d_{31} & d_{33} & 0 & 0 & 0 \end{bmatrix}$$

$$\begin{bmatrix} P_x^{(2)}(\omega) \\ P_y^{(2)}(\omega) \\ P_z^{(2)}(\omega) \end{bmatrix} = 2\varepsilon_0 \int_{-\infty}^{+\infty} \begin{bmatrix} 0 & 0 & 0 & 0 & d_{15} & -d_{22} \\ -d_{22} & d_{22} & 0 & d_{15} & 0 & 0 \\ d_{31} & d_{31} & d_{33} & 0 & 0 & 0 \end{bmatrix} (\omega) \cdot \begin{bmatrix} E_x(\Omega) E_x(\omega - \Omega) \\ E_y(\Omega) E_y(\omega - \Omega) \\ E_z(\Omega) E_z(\omega - \Omega) \\ 2E_y(\Omega) E_z(\omega - \Omega) \\ 2E_x(\Omega) E_z(\omega - \Omega) \\ 2E_x(\Omega) E_y(\omega - \Omega) \end{bmatrix} d\Omega$$

$$P_x^{(2)}(\omega) = +2\varepsilon_0 \int_{-\infty}^{+\infty} \chi_{15}^{(2)}(\omega) E_x(\Omega) E_z(\omega - \Omega) d\Omega - 2\varepsilon_0 \int_{-\infty}^{+\infty} \chi_{22}^{(2)}(\omega) E_x(\Omega) E_y(\omega - \Omega) d\Omega$$