電磁波與天線導論 HW3

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1

$$\phi(t) = \frac{3000}{60} 2\pi t = 100\pi t$$

$$\Phi(t) = \int_s \vec{B} \cdot d\vec{S} = \hat{y}(0.05) \cdot \hat{y}(0.02 * 0.03) * cos\phi(t) = 3 * 10^{-5} cos 100\pi t$$

$$V = -N\frac{d\Phi}{dt} = 3\pi * 10^{-3} sin(100\pi t)$$

$$I = \frac{V}{R} = 6\pi * 10^{-3} sin(100\pi t)(A) - < ans >$$

2

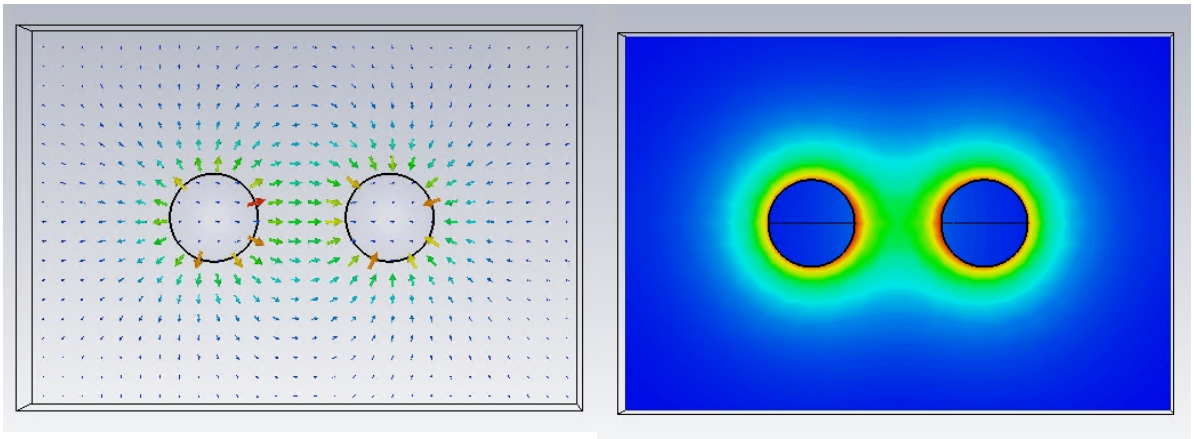
$$I = -\frac{\epsilon A}{d} V_0 \omega sin(\omega t) = -\frac{4\epsilon_0 A}{d} V_0 \omega sin(\omega t)$$

$$= -\frac{4 * 8.85 * 10^{-12} * 10^{-3}}{1 * 10^{-2}} 30 * (2\pi 10^6) sin(2\pi 10^{-6} t)$$

$$= 6.67 * 10^{-4}(A) - < ans >$$

3

eletrical field



electrical flux density