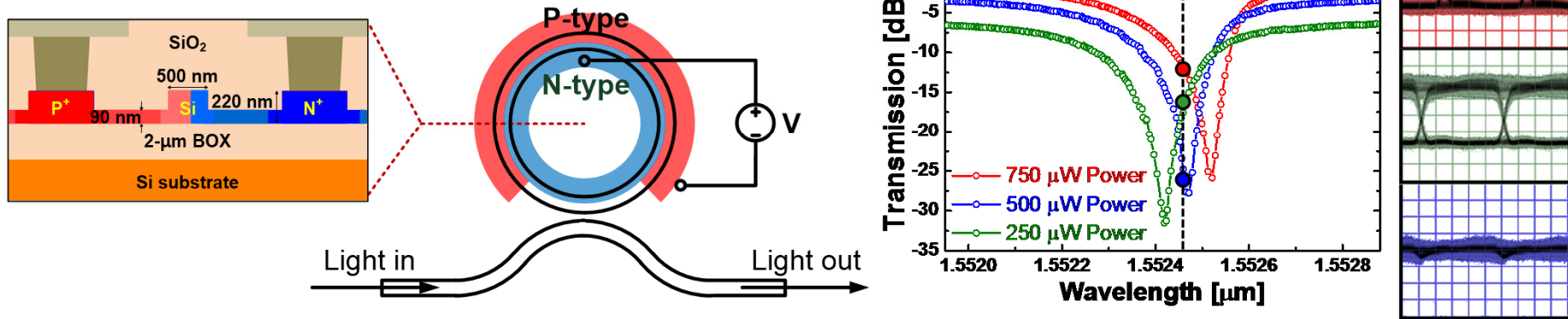
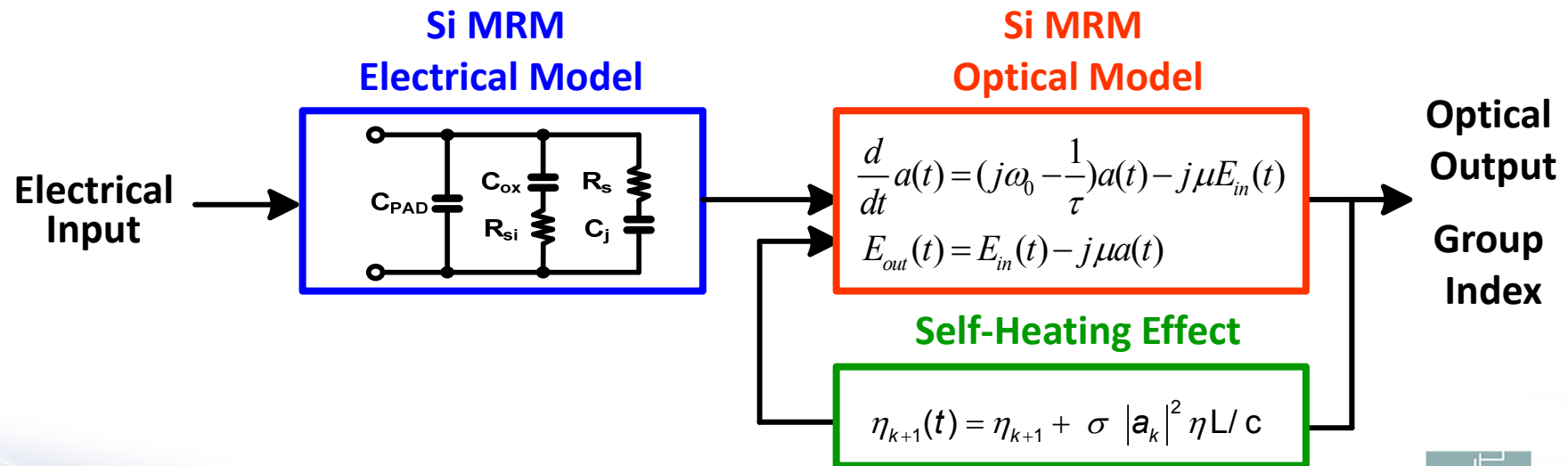


Si MRM Full Numerical Modeling

- Si Micro-Ring Modulator (Si MRM)



- Full Modeling Schematic



Si MRM Small-Signal Modeling

Electro-Optic Frequency Response

$$\Delta(s) = \frac{\mu^2}{\eta_0} \cdot \frac{\partial \eta}{\partial v} \cdot \frac{2\omega_0 D}{D^2 + 1/\tau^2} \cdot \frac{s + 2/\tau_1}{s^2 + (2/\tau)s + D^2 + 1/\tau^2} = \frac{\mu^2}{\eta_0} \cdot \frac{\partial \eta}{\partial v} \cdot \frac{2\omega_0 D}{D^2 + 1/\tau^2} \cdot \frac{s + z}{s^2 + 2\zeta\omega_n s + \omega_n^2}$$

