S1. Optical characterization: calculation details

Detailed calculation of the absorption and scattering coefficients for quantum efficiency values:

$$K = \frac{1}{2d}\frac{1 - R_\infty}{1 + R_\infty} ln\left(\frac{R_\infty(1 - R_\infty R_0)}{R_\infty - R_0}\right) \quad \textbf{(1)}$$

$$S = \frac{1}{2d}\frac{R_\infty}{1 - R_\infty^2} ln\left(\frac{R_\infty(1 - R_\infty R_0)}{R_\infty - R_0}\right) \quad \textbf{(2)}$$

Linear absorption and scattering coefficients a and s can be calculated as:

$$K = 2a \quad \textbf{(3)}$$

$$S = \frac{3s(1 - g) - a}{4} \quad \textbf{(4)}$$

where *K*, *S*, d and g are diffuse absorption coefficient, diffuse scattering coefficient,) sample thickness (cm) and g is scattering anisotropy factor.