

Scattering Theory

The cross section within the small angle approximation for particles in a solution reads

$\frac{d\sigma}{d\Omega}$

Unknown macro: {d Omega}

$\equiv n \Delta \rho^2 V_p^2 \left| S(\mathbf{q}) \right|^2 P(\mathbf{q})$

Unknown macro: {q}

where the particle density is given by

$n = \frac{N}{V}$

Unknown macro: {N}

Unknown macro: {V}

The scattering length density contrast between the particles and the solvent reads

$\Delta \rho(\mathbf{r})$

Unknown macro: {r}

$= \rho_b(\mathbf{r})$

$- \rho_s$

The particle form factor reads

$P(\mathbf{q})$

Unknown macro: {q}

$= \left| \frac{1}{V} \int dV e^{-i \mathbf{q} \cdot \mathbf{r}} \rho(\mathbf{r}) \right|^2$

Unknown macro: {1}

Unknown macro: {q}

$\int dV e^{-i \mathbf{q} \cdot \mathbf{r}} \rho(\mathbf{r}) \right|^2$