

$$K_F = \frac{2 |\mathbf{p}_D|^2}{h} \int_0^\infty f_D(\omega) \operatorname{Im} [\alpha(\omega)] \times \left| \mathbf{n}_A \cdot \vec{\mathbf{Q}}(\mathbf{r}_A, \mathbf{r}_D) \cdot \mathbf{n}_D \right|^2 d\omega$$