

**rotational relaxation time,  $\rho$** 

Parameter describing the time-dependence of the tumbling of a molecular entity in a medium of viscosity  $\eta$  as originally defined by Debye, and used by Perrin in the original development of the theories of rotational motion of fluorophores.

Note:

Related to the rotational correlation time,  $\tau_c$ , by  $\rho = 3 \tau_c$ . Thus, in the case of a spherically emitting species reorienting itself in a homogeneous fluid,  $\rho = 1 / (6 D_r)$ , with  $D_r$  the rotational diffusion coefficient.

**Source:**

PAC, 2007, 79, 293 (*Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006)*) on page 416