

**quantum yield,  $\Phi$** 

The number of defined events which occur per *photon* absorbed by the system. The integral quantum yield is:

$$\Phi = (\text{number of events})/(\text{number of photons absorbed})$$

For a photochemical reaction:

$$\Phi = (\text{amount of reactant consumed or product formed})/(\text{amount of photons absorbed})$$

The differential quantum yield is:

$$\Phi = \frac{d[x]/dt}{n}$$

where  $d[x]/dt$  is the rate of change of a measurable quantity, an  $dn$  the amount of photons (mol or its equivalent einstein) absorbed per unit time.  $\Phi$  can be used for photophysical processes or photochemical reactions.

See also *efficiency*.

1996, 68, 2267; 1994, 66, 1155; 1996, 68, 178; G.B. 57; see also 1990, 62, 2208