

synchronization (principle of nonperfect synchronization)

This principle applies to reactions in which there is a lack of synchronization between bond formation or bond rupture and other primitive changes that affect the stability of products and reactants, such as resonance, solvation, electrostatic, hydrogen bonding and polarizability effects. The principle states that a product-stabilizing factor whose development lags behind bond changes at the *transition state*, or a reactant-stabilizing factor whose loss is ahead of bond changes at the transition state, increases the intrinsic barrier and decreases the 'intrinsic rate constant' of a reaction. For a product-stabilizing factor whose development is ahead of bond changes, or reactant factors whose loss lags behind bond changes, the opposite relations hold. The reverse effects are observable for factors that destabilize a reactant or product.

See also: imbalance, synchronous

Source:

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1170