



## The influence of microwave system from the organizational behavior in the reaction

### (1) the point of view of against the non-thermal effect

In the absence of electromagnetic field, the direction of the reactant molecule collision will be sure to maintain a statistically isotropic. In electromagnetic field, more and more polar molecules in the role of orientation and the electric field is in the same direction, the direction of the electric field will cause the collision anisotropy, but at the same time, thermal motion will tend to isotropic. According to Langevin function calculation, it will take about  $10^6$  V/m strong electric field which will affect the reactant molecules between random collisions at room temperature, causing the organizational behavior. So often, due to thermal motion, collision of the reactant molecules remains under microwave radiation of randomness, the electric field is too weak and it is not likely to cause the organization behavior. And, it is often accompanied by high temperature in the microwave to speed up chemical reaction, the stronger the electric field, the higher the temperature, and thus the harder to influence the random collisions reactant molecules, inducing the organization.

### (2) agree with non-thermal effect

Opponents ignore the problem, Langevin function is based on the equilibrium state of Maxwell's theory- which is based on the Boltzmann distribution, for the theory of nonequilibrium corresponding calculation is reliable and it is also questionable. A physical chemistry open system far from equilibrium that has the ability of self-organization process. Such a system through continuous exchange of matter and energy with the outside world, it is possible to shift from the original chaotic state as a function of time, space, or on the order, usually only as a weak current noise or interference magnetic field may have a significant impact on the system. The nonlinear system was observed in the phenomenon of stochastic resonance is a typical example.

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