2B1s **Chemical Zeno effect and it's manifestations.**

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Chemical Zeno effect [1] is the effect of suppression of the singlet-triplet conversion in radical pairs by irreversible spin selective recombination process such as the cage recombination. Chemical Zeno effect is similar to quantum Zeno effect where the measurement process was proved to suppress quantum evolution and transitions from the initial state. The similarity between quantum Zeno and chemical Zeno effect is based on the similarity between quantum measurement processes and spin selective recombination because both processes are described by projection operators. For Δg-mechanism of spin conversion the spin selective recombination has been shown to be able to decrease the frequency of spin conversion Ω

$$\Omega = \sqrt{\Delta\omega^2 - w^2/4}\,,$$

here $\Delta\omega$ is the frequency of singlet-triplet conversion due to the difference of Zeeman interactions, w – rate constant of spin-selective recombination.

The main manifestations of the Chemical Zeno effect is the ability of the spin selective recombination process (for large enough values of w) to decrease the whole reaction rate and the yield of recombination products. Thus CZE is explained by decreasing of the rate of the radical pair conversion from the triplet state into singlet one. Spin selective recombination has been proved to be able to transform oscillating spin conversion into "kinetic" nonoscillating one. The influence of the exchange interaction is also considered.