

NMR Studies on Iron Pnictide Superconductors of $\text{LaFeAsO}_{0.89}\text{F}_{0.11}$ and Ca-Fe-Pt-As

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Results of NMR studies on Fe pnictide superconductors of $\text{LaFeAsO}_{0.89-x}\text{F}_{0.11+x}$ and Ca-Fe-Pt-As are presented. (1) The nonexistence of the coherence peak in NMR- $1/T_1$ vs T curves of Fe-pnictides is well known and has been considered in many reports as the evidence for the s_{\pm} -symmetry with the sign reversing of the order parameters between the Fermi surfaces around Γ and M points. One might think that it contradicts the fact that the T_c -suppression by nonmagnetic impurities is too small, as we pointed out by detail studies on $\text{LaFe}_{1-y}\text{M}_y\text{AsO}_{0.89}\text{F}_{0.11}$ (M=Ru, Co, Ni) system. On this point, arguments are given that if effects of the energy-broadening of quasi-particles are taken into account, the nonexistence of the coherence peak can be well understood using the s_{++} -symmetry with no sign reversing. (2) Samples of Ca-Fe-Pt-As system first found by Nohara's group was prepared ($T_c \sim 30$ K) and characterized. Here, results of our ^{75}As -NMR studies on this system are given in addition to various other physical properties.

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