I present a topic on the kaonic nuclear molecule $K^-pp$, which has recently been predicted and studied profoundly [1]. It is the fundamental unit for “super strong nuclear force”, which is caused by a migrating $K^-$ meson as:

$$Super ~strong ~nuclear ~force: ~K^-p + p \leftrightarrow p + K^-p.$$  \hspace{1cm} (1)

This is a kind of revival of the abandoned Heitler-London=Heisenberg scheme for nuclear force.

Figure 1: (Left) The adiabatic potential $(V(R) R^2)$, when a proton approaches a bound $K^-p$ “atom” ($\Lambda^*$), as a function of the distance between $p$ and $p$. For comparison the Tamagaki potential for the normal $V_{NN}$ interaction is shown. (Right) The molecular structure of $K^-pp$. The projected density distributions of $K^-$ in $K^-pp$ with a fixed $p-p$ distance (= 2.0 fm) and the corresponding $K^-$ contour distribution are shown.