

STUDY OF SUB-LOW ENERGY FUSION REACTION IN METALS

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The study of D-D reaction in various metals and D/p-Li in solid and liquid phases will be introduced. Significant enhancement of D-D fusion in $E < 20\text{keV}$ has been found in pioneers work and also in our experiments with some metal targets. It is considered to be abnormal, since it cannot be interpreted by electron screening effect. Additional screening potential in host-metals is proposed. But the distribution of deuterium inside targets is always a difficult for getting the convinced conclusion. The D/p-Li reaction is therefore studied in 20-75keV region, since the target is homogenous. The experiments were carried out with solid and liquid Li-targets. Over ten percent enhancement is found in the liquid target, and the yield increases with the temperature, while the liquid Li-target is used. Such phenomena cannot be understood by existed theory. The influence of targets inhomogeneity and contamination, multi-scattering of projectiles, stopping power different and plasma effect etc. have been discussed. But there is still no interpretation and conclusion. I will give a briefly introduction about Lanzhou University and our research activities before starting the scientific topic.