CHAPTER V

Discussions

In this thesis an attempt has been made to understand the dynamics of nuclear force on the basis of a new model of hadrons, developed by Bandyopadhyay. This model has, so far, been able to explain many subtle and intricate behaviours of strong interaction and the most interesting point about this model is that the hadrons, in this model, contain no imaginary or mathematical particles, which need eternal confinement, owing to some arbitrary rules introduced from time to time, under pressures from every new experiment. It contains well-known particles and any type of strong interaction is the result of excitement of and the consequent exchange of mesons from these constituents. If it now can explain nucleon force with success, as we believe it does, not only the very old problem finds an worthy solution, we could claim that a comprehensive theory of strong interaction is in the making. And, therefore, we should apply it to many other areas and predict those which has not yet been studied experimentally. Indeed one such area is the nucleon-nucleon charge exchange reaction. Here also we find a situation where conventional theories face a very awkward situation. Our model could explain some behaviour which we have tried to explain in chapter IV above.

Our N-N potential though inherits some very well-known and successful ideas of the past theories, it contains some new elements. Therefore there is a vast field of applying the potential to nuclear structure calculations and also we have plan to apply the same in neutron star problems and many others.