CONCLUSIONS

1. Solution Treatment at 1000°C causes the fragmentation of grain boundaries together with formation of coarse precipitate particles.

2. Aging at 400°C and 500°C results in the dissolution of pre-existing precipitate particles. As the aging proceeds, dissolution of pre-existing precipitate particles is accompanied by the segregation of precipitate particles along the grain boundaries as well as the formation of new fine/coarse precipitate particles within the grains and along the grain boundaries.

3. Maximum age hardening response is observed at 500°C. However, faster aging process is observed at 400°C. It is evident from the peak in aging curve, that peak hardness is observed after 15 minutes at 400°C as against a peak after 60 min at 500°C.

4. The variations in hardness values after various stages of thermal processing are attributed to the dissolution of pre-existing precipitate particles, segregation of precipitates particles along the grain boundaries and formation and growth of new fine/coarse precipitates particles within the matrix as well as along the grain boundaries.
SUGGESTIONS FOR FUTURE WORK

1. Further investigations can be carried out to study the effect of aging treatment on mechanical properties viz. tensile properties, impact properties and r-value.

2. In order to ascertain the nature of precipitates, transmission electron microscopic (TEM) examinations can be conducted after various stages.

3. Scanning electron microscopy (SEM) study of tensile and impact fractured surfaces can also be carried out.

4. Effect of cold work can also be studied on the aging behavior of sheet steel under investigation.