

Chapter 6: Scope for future work

There are some suggestions for new research areas related to the processes and materials stated in this thesis, which is given below.

1. Corrosion testing of the welded plate and processed plate may be investigated in different environments to study the effect of FSP on the corrosion behaviour of the weldment.
2. In depth study can be carried out on GMAW of ferritic stainless steel to study the effect of different filler materials on the properties of the weldment. Studies on GMAW of duplex stainless steels can also be carried out.
3. The results of this study could be replicated on thicker sheets of ferritic stainless steel. Similarly, FSP can be attempted on other materials to improve their properties.
4. Characterisation of tool material for friction stir welding and FSP of high temperature softening materials like stainless steels at different heat input can be carried out.
5. Efforts can be made to study of the effect of Z thrust applied during FSP on the properties of the processed material.
6. A heating source like a laser beam or electron beam along with frictional heating can be used to enhance the FSP process. Auxiliary heating sources can also be utilised for post weld heat treatment and to control the cooling rate during FSP.
7. FSP can also be carried out on welded joints which are produced at different welding process parameters and to see the improvement in properties after FSP.