EDITORIAL

In recent years significant understanding of the welding processes and welding materials have been possible due to intense R & D work. New processes, new materials are being introduced and at the same time overall integrity requirements under severe service conditions are in demand by the codes and standards. Friction stir welding (FSW), for example, a novel solid-state welding process, is now available to the industries for full utilization of its vast potentialities. The FSW process is inherently simple, with few variables and other inherent advantages. However, lot of research works on FSW process are in progress to explore its technical characteristics interfacing with different materials as well as processes. This will develop more confidence among the fabricators and will undoubtedly increase the domain of existing applications. FSW is already been applied in aircraft, ship building and automobile industry. Recently FSW process has been included in ASME Section IX for power plant application indicating gradual penetration in different sectors.

In this issue, there are three contributed paper and one Technical Note. P. Sivaraj et al. in their paper "Fatigue behavior of friction stir welded rolled thick plates of AA7075-T651 aluminium alloy joints" have shown improved fatigue life of friction stir welded AA7075-T651 aluminium alloy joints compared to fusion welded joints but appreciably lower than unwanted parent metal.

In another study "A comparative study on fatigue performance of DP590 and DP780 spot welded and weld bonded steel sheets", P. Banerjee et al. obtained improved static and dynamic strength of DP 590 and DP 780 steel sheets using weld bonding process as compared to resistance spot welding process. Automotive industries may be interested to utilize weld bonding as an improved method of fabrication.

In the study of "A comparison between microstructure, tensile properties and pitting corrosion resistance of friction stir and gas tungsten arc ferritic stainless steel welds" the authors G. M. Reddy et al. reported on the characteristics of friction stir and gas tungsten arc ferritic stainless steel weld with respect to mechanical and corrosion properties. Though friction stir welded joint attributed superior strength and ductility of the joint, but showed poor pitting corrosion resistance compared to GTAW process. Authors opined that variation in micro structural constituents is largely responsible for such wide difference.

Welded joint, in particular heat affected zone (HAZ), of pipe material used in supercritical power plant is the weakest link in the high pressure steam piping, super heater tubing and reheater and thus directly control the efficiency of power plant. Thus creep behavior of individual zone of weldments becomes more important to improve overall performance of weldments. Preliminary investigation by P.K.Mandal et al. reveals that it is possible to evaluate the steady state creep of different zones in weldments.

With joyous Bijoya and Deepabali greetings.

Dr. T. K. Pal
Chief-Editor
Email: iwj.iiw@gmail.com