From the Editor's Desk

A proper scrutiny of welded joints lays stress on finding out the joint's soundness – quality, its mechanical properties, compositional variations, micrographic consistency and so on, and then predicts on the viability of the joint. Non-destructive testing of welded joints of finished, near finished components or a part thereof has become quality control's master stroke, so to speak, in the fabrication industry in general. Near surface, sub-surface or deep inside – across all these areas material unsoundness can prevail. Under the application of load dislocation condensed voids become micron size 'engineering flaws' which need to be located and arrested, if possible, thereby improving the life performance of the material. Flaws become critical in time and consequently brittle failure follows soon. Flaw detection by Non-destructive testing now needs no introduction. Author S. S. Ananthan's paper "Non-destructive Testing of Welds" would no doubt generate interest, both at the basics and user's levels, for many a technologist.

Over the last 100 years or so, joining and cutting processes of metals have undergone great changes with regard to consumables, power generation and equipment, in order to control the 'rate' of reaction processes for ever better quality of joining or cutting. Consumer industries and the market place generally are demanding quality product, for a price of course. Indeed Manual Metal Arc Welding (MMAW) process is gradually being replaced by the more efficient and economical Gas Metal Arc Welding (GMAW) process globally. In the paper "Recent Advances in Arc Welding", the author R. Banerjee has discussed the whole gamut of industrial welding processes now in vogue.

"High strength-to-weight" ratio is the catchy term for fuel economy, whether for the rocket motor casing or the fuel tank, and the material for ready reference is Al-Li alloy. Demand for this material is ever on the rise as its fabrication quality is improving with alloying additions and heat treatment. Research work at different levels is going on with this material, improving its mechanical, corrosion and other properties. Evaluation of welding effects on grain sizes in the weld affected zone encompasses structure-property relationship in the realm of physical metallurgy, and T. K. Pal et al's paper entitled "Some Aspects on Weldability of Aluminium Lithium Alloy" essentially provides an insight helpful to welding metallurgists.

Energy input criteria for resistance welding have often been discussed since the advent of much thinner sheet metals used in the auto industry in particular. In the paper entitled "Choice of Power Source for Resistance Welding", author V. V. Phadke has elaborated a very simple approach to calculate the desired power source for resistance welding in general, the design aspect notwithstanding.

The Indian Welding Journal has often discussed the pollution aspects in the welding industry. This was inevitable for the deleterious effects of pollution are causing growing concern. Suffering and wastages, however, are controllable with the contemporary industrial safety practices. S. S. Dasgupta, in his paper "Pollution in Welding Industry", has detailed the types and origins of welding related pollution, its effects on 'man and the machine'. Specific and helpful information is presented liberally, which would benefit some directly, and others might find the paper useful for reference purposes.

An exhibition and seminar on "Russia's Achievements in Welding & Accessory Technologies" was organised by the cultural department of the Russian Federation Consulate General in Kolkata in association with the Indian Institute of Welding, Kolkata branch, at Gorky Sadan on 10-13th December 2001. A high level Russian Technical Delegation was present on the occasion and in the seminar they spoke about Russia's achievements in welding and allied technologies. This issue of IWJ contains a report on the event together with a relevant overview by Mr. Anupam Haldar, Vice President of IIW National Council. An MOU between Russian Welding Society and IIW is also expected and we look forward to it.

I wish a very happy New Year to all our members.

Dr. P. Majumdar
– Editor