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## **A SUMMING UP OF THE PROCEEDINGS OF THE NATIONAL WELDING SEMINAR - 1995, 23-25 NOVEMBER 1995, COCHIN**

By  
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This year's National Welding Seminar was organised by the Cochin Branch of the Institute and was held at Hotel International, Ernakulam. In the inaugural programme, on Thursday the 23rd November 95, Cmdr. S. S. Bawa, AVSM, CMD, Cochin Shipyard Ltd., was the Chief Guest while the welcome address was delivered by Mr. M. C. Sidharthan, Chairman, IIW Cochin Branch and Dr. Placid Rodriguez, delivered the 4th presidential address - a record by itself which contained some of the recent activities of the Institute and highlighted the International collaborations the Institute had entered into.

Cmdr. Bawa, inaugurating the seminar commented the significant role played by the welding technologists in improving productivity in ship building industry in particular.

Mr. J. K. Nanda, President - Elect of the Institute, released the colourful souvenir brought out for the occasion.

Mr. V. N. Girijavallabhan, Hony. Secretary of Branch proposed the vote of thanks.

Inaugural programme was concluded with the presentation of various awards of the Institute to

the recipients for the papers presented during the last year's National Welding Seminar.

This year's prestigious Sir L P Misra Memorial Lecture was delivered by Mr. S. K. Burman, Technical Director of M. N. Dastur & Co., Calcutta paying tribute to late Sir L. P. Misra for his contributions in the early stages of the development of welding technology in the country, Mr. Burman touched upon various salient tasks ahead for all of us - welding engineers, researchers and educationists - in the coming years.

In the technical programme, 31 papers were presented in 7 sessions. On the first day, in three sessions, technical papers relating mainly to industrial welding technology were presented. In the session on Fabrication Practices, chaired by Mr. V. P. Nair, CSL, Cochin, an interesting paper on Welding and heat treatment of X20 Cr Mo 121 - piping material by Mr. B. Shaw of L & T, Mumbai, was presented. The author claimed to have produced zero defect welds. In contrast, Mr. Shanmugham, IGCAR, presenting a paper stressing the need for carrying out repair welds and multi repair welds, indicating difficulties in achieving welds

with zero defects. This was presented in the third session of the day on 'Maintenance Applications,' which was chaired by Prof. D.R.G. Achar, IIT., Madras.

In the session on Diffusion Engineering, a paper on 'Roller Press Regeneration' elucidated with great clarity the details of recovering roller presses through welding. There were two other interesting papers on maintenance and hard facing by Mr. Sankaran, NLC and Mr. K.S. Krishnamurthy, IGCAR. The paper on wear facing by Mr. Karanbikar left much to be desired from practical point of view. In the second session, chaired by Mr. R. S. Babu, WRI, Trichy, a paper on 'Computer Aided Resistance Welding Control' System by Mr. C.R.P. Shetty, NFC, Hyderabad, gave an account of the state of the art technology in controlling resistance weld quality. The other two papers in the session dealt with design of fluxes and laser beam welding. Unfortunately, there were no presentations dealing with welding process system and monitoring indigenous equipment manufacturers.

The second day's deliberations were devoted to welding research and development activities in the country. Welding of alloy and

stainless steels continued to occupy the attention of the majority of the researchers. Papers on Residual Stress Evaluations by Mr. Sanjay Rai, IGCAR, and Hot Cracking problems by Mr. V. Shankar, IGCAR, Embrittlement in AISI 316 SS by Mr. H. Shaikh, IGCAR were presented. Mr. Garg's (WRI, Trichy) paper on 'Plasma Arc Hard Facing on SS 304' gave an insight into the new approach. The first session was chaired by Mr. M. P. Dhanuka, AOL, Bombay. The second session on 'Research' was chaired by Dr. G. L. Datta, IIT, Kharagpur and focussed mainly on the current works relating to mechanical property evaluations of weldments. In this the new approaches of using under matching and over matching strength welds for certain specific critical application was highlighted by Mr. Angamuthu, IIT., Madras, In his paper on 'Mismatched Steel Weldments'. Another interesting paper in the session was presented by Mr. S. Suresh, WRI on the Thermo - mechanical modelling approaches in predicting weld distortions. One wondered regarding the inclusion of the paper on 'Ship Primer in Ship building, in the research session. The presentation was by Mr. E. J. Furtado, Sigma Paints, Netherlands, was, however, very lucid and informative.

The last session on 'Research' was chaired by Mr. S. K. Burman, Vice-President, IIW. Interesting papers on titanium alloys, which are increasingly drawing attention

of fabricating engineers were presented. Prof. S. Sundaresan, IIT Madras presented a paper dealing with the inter relationship between microstructure and strength of Ti6Al4V material disposing excellent micrographs and factographs. Use of high energy density welding processes EB and LASER in surface modification of these alloys were presented by Mr. Vinod Kumar, VSSC, Trivandrum. The hydrogen assisted cracking problems in Cr-Mo steels were brought out very well in the work of Mr. S. K. Albert, IGCAR. There was one paper on aluminium welding research dealing with distortion control by researchers from WRI Trichy.

The last day of the seminar had only one technical session in the morning which dealt with manpower development in the indigenous welding industry by Dr. K. G. K. Murthy, WRI and Dr. G. L. Datta, IIT Kharagpur, and on occupational health in the welding industry by Dr. R. C. Panjwani, L & T, Mumbai. Dr. Panjwani, a medical practitioner, in his excellent disposition highlighted existence of various health hazards in welding and measures which could be taken to counter them. It was no wonder that he was awarded with the best paper presentation award of the National Welding Seminar, 1995.

In the overall assessment of the presentations of the seminar, there were reports of specific

strides made with regard to maintenance and repair welding, welding of current materials for the power industry, usage of some of the state-of-the-art welding processes. There were also papers presented which only highlighted text book knowledge or research interests of yester-years. I am sure future organizers of the Seminars will be more selective in their quest for technical papers for such an important annual event of the Institute. It was felt that a session dealing with failure analysis and residual life assessment of welded structures should have been organised.

The panel discussions, were very lively and interacting. The panelists consisted of M/s. J. K. Nanda, R. S. Babu, K. G. Viswanathan, M. P. Dhanuka, T.P.S.Gill, S. Sundaresan and D.R.G. Achar.

Cochin Branch was complemented for putting up an excellent seminar of the kind.

Whatever little shortcomings were there were amply compensated by the Branch in providing an excellent exposure of cultural and culinary specialities of Kerala on the evening of the opening day. They also organised a trip to Kaladi, the birth place of Sri Adi Shankaracharya. The valedictory function was presided over by Mr. J. K. Nanda and the valedictory address was delivered by Mr. Mani Iyer, GM (Materials), C.S.L., Cochin and it was my privilege to sum up the deliberations.