



Technical Lecture

Topic: *Effect of Flux on A-TIG Weldments*

Speaker: *Dr. Ravi Shanker Vidyarthi, BITS Pilani, Hyderabad*

Date & Time: *7th November, 2019, Thursday, 15:00 hrs*

Venue: *MDL Seminar Hall, MMG*

All are invited!

Tea will be served at 14:45 hrs

P. Vasantharaja
(For IIM Kalpakkam Chapter)

Abstract

Almost all engineering structures need welding at least once in life time either to join the individual parts to form one as a whole or to repair during the service period. Tungsten inert gas (TIG) welding process is widely known for producing defect free sound quality welds. However, constraints like low single pass penetration, uncontrolled weld penetration due to minor variation in alloying elements, and requirement of several number of passes for thick gauge sections make it less productive process. Gauge sections thicker than 3 mm generally need grooves, filler wire to fill the groove and multiple welding passes using TIG welding process. Making of grooves and multiple passes involves time and efforts, and ultimately increase the production cost. Activating flux tungsten inert gas (A-TIG) welding is growing as a solution to low penetration. Flux composition used for the A-TIG welding are having great impact on the quality of the weldments. In the present work, we will see the influence of the activating flux during welding of 409 ferritic stainless steel and P91 martensitic/ferritic steel. In case of the dissimilar metal joining along with the flux composition flux coating pattern also observed as influential factor. The impact of coating pattern will be discussed for P91- 316L combination joining. Influence of activating flux on the microstructure, mechanical properties and corrosion behaviour will also be discussed on the basis of results obtained from optical microscope, field emission scanning electron microscope (FESEM) equipped with Energy-dispersive X-ray spectroscope (EDS), and X-ray diffractometer (XRD).