

Introductory Chapter: A Brief Introduction To Joining And Welding

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INTRODUCTION

Joining is an important process in a number of industries, such as aerospace, automotive, oil, and gas. Many products cannot be fabricated as a single piece, so components are fabricated first and assembled later. Joining technology can be classified as a liquid-solid-state process and mechanical means. Liquid-solid-state joining includes welding, brazing, soldering, and adhesive bonding. Mechanical joining includes fasteners, bolts, nuts, and screws.

Metal joining is a process that uses heat to melt or heat metal just below the melting temperature. Joining metal by fusion is known as fusion welding. Without fusion, the process is known as solid-state welding. Fusion welding includes arc welding and laser welding, Whereas solid-state welding such as friction stir welding (FSW) where process occurred below the melting temperature...

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