

Development of Thick Tube Hydroforming Process

Abstract

Tube hydroforming is a hybrid forming operation whereby a thick tube is formed to a desired geometry by combining forging and hydroforming operations. Through this process hollow structures with high strength-to-weight ratio can be produced for applications in tube fittings, automotive parts, power transmission systems, etc. In this process, a thick tube is deformed by pressurized fluid contained within the tube using a multi-purpose punch assembly, which is also used to feed tube material into the die cavity. The pressure is generated by compressing the fluid volume contained within the tube which plastically deformed the tube.

Biography

Dr. Bandar received his doctoral degree from North Carolina State University in Mechanical Engineering back in 2016. In summer 2011, He got his Master of Science degree in Mechanical Engineering from Lehigh University. He acquired his Bachelor degree in Mechanical Engineering in 2001 from King Abdulaziz University. In 2002, he joined Saudi Electricity Company as a material engineer and worked there for more than six years. Currently, he is working as an Associate Professor in Mechanical Engineering Department at Prince Sattam bin Abdulaziz University. His research interests are material processing by deformation, hybridization in manufacturing processes, material science and engineering. He taught many courses such as mechanics of materials, theory of metal cutting, manufacturing Processes, and supervised numerous graduation projects.



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12:00-1:00 Pm

Department Seminars Room