جامعة الأمير سطام بن عبد العزيز
Prince Sattam Bin Abdulaziz University
كلية الهندسة
College of Engineering

Friction Stir Welding Principles and Applications

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Department Seminars Room

Abstract

Friction stir welding (FSW) is considered an advanced solid-state joining technology for engineering materials. It has been developed and used for many metal alloys and is in operation since invention in 1991. In FSW a non-consumable rotating tool consisting of shoulder and pin, is plunged into two abutting sections resulting in the heating and softening of the surrounding material. This leads to localized severe plastic flow about the rotating tool, i.e. stirring, which produces the joint without melting. The heat generated also allows the tool to be traversed along the joint line leading to long lengths of continuous weld.

Biography

Dr. Zaky received his PhD in the field of Materials Engineering from the University of Sheffield in 2009. Before joining Prince Sattam Bin Abdelaziz University in 2020 he was Professor at the Mechanical Engineering Department, the British University in Egypt (BUE). Dr. Zaky previously is being Professor at the Metallurgical and Materials Engineering Department, Suez University, Egypt where he established number of research centers such as the friction stir welding center and the Metallurgical and Materials research center of scientific excellence at Suez University. Dr. Zaky has wide range of experience in friction stir welding, materials development, and characterizations.