Patent Search

Invention Title	INVESTIGATING THE ELECTROCHEMICAL BEHAVIOR OF CARBON-STAINLESS STEEL RESISTANCE SPOT WELDING JOINTS
Publication Number	36/2023
Publication Date	08/09/2023
Publication Type	INA
Application Number	202341057418
Application Filing Date	27/08/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	MECHANICAL ENGINEERING
Classification (IPC)	B23K0011110000, B23K0011200000, B23K0011000000, C25D0005360000, B23K0103200000

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Abstract:

An in-depth methodology and investigation into the electrochemical behavior of resistance spot welded (RSW) joints between carbon steel and stainless steel. This in sheds light on the inherent challenges and opportunities presented by the union of these metals, offering insights into their corrosion resistance, galvanic coupling, a associated electrochemical interactions. The methodology is designed to inform and enhance future applications of such joints in various industries, emphasizing the performance, longevity, and potential preventive measures. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention relates generally to the field of welding and metallurgy, and more specifically to the study and characterization of the electrochemical behavior of resistance spot welded joints made between carbon and stainless steel. The invention delves into understanding the corrosion resistan galvanic coupling, and other electrochemical properties of such welded joints, thereby providing insights into their potential applications, longevity, and performanc various environments.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the informati provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue c inclusion in this section.

[004] Welding, as a technique for joining materials, particularly metals, has been practiced for centuries, evolving in sophistication with technological advancements Resistance spot welding (RSW) has been a favored technique in various industries, particularly in automotive manufacturing, due to its ability to rapidly create joints the need for consumable materials. Typically, RSW involves the application of pressure and electric current to small areas, or "spots", of the metals being joined. The generated by the resistance to the electric current flows causes localized melting, subsequently forming a weld upon cooling.

[005] In the world of metals, carbon steel and stainless steel have established themselves as two of the most commonly used materials. Carbon steel, known for its

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