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MODELING OF RESISTANCE SPOT WELDING PROCESS – A REVIEW

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ABSTRACT

Resistance spot welding (RSW) modeling in general and prediction in particular, have been a main topic in research for the last few decades, but although the information is quantitatively enormous, it is also spread widely in the literature, and difficult to find. In this work, a review has been carried out of the history of modeling and prediction of Resistance Spot Welding in metals. Resistance spot welding is a process that is being widely used in the industry for sheet joining purposes. The spot welding process is a complicated phenomenon, which involves the mechanical, thermal, electrical and metallurgical factors. It requires modeling of complex interaction between electrical, thermal, metallurgical and mechanical phenomena to the process and to get the optimum weld quality. This paper reviews the research trends in modeling of the resistance spot welding process.

KEYWORDS: Resistance Spot Welding, Quantitative Analysis, Mechanical Phenomenon, Metallurgical Characterization and Numerical Modeling