## FRICTION STIR WELDING DEVELOPMENTS IN STEEL

W. M. Thomas<sup>1</sup>, E. Siores<sup>2</sup>, C. E. D. Rowe<sup>3</sup>, D. Moon<sup>4</sup>

TWI Ltd, United Kingdom, <sup>2</sup>The University of Bolton, United Kingdom, <sup>3</sup>Cedar Metals Ltd, United Kingdom, <sup>4</sup>United States Navy Research Laboratory, USA wayne.thomas@twi.co.uk

## ABSTRACT

The paper looks at recent advances made in friction stir welding (FSW) of steel using refractory metal tools, and describes a method of securing two different types of refractory materials to provide a composite FSW tool. The use of composite tools enables different 'coupling' relationships to be made between the shoulder and the workpiece and the probe and the workpiece. The development of FSW from the perspective of discovery, invention and innovation is also considered.

**KEYWORDS:** Friction Stir Welding, steel welding.

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