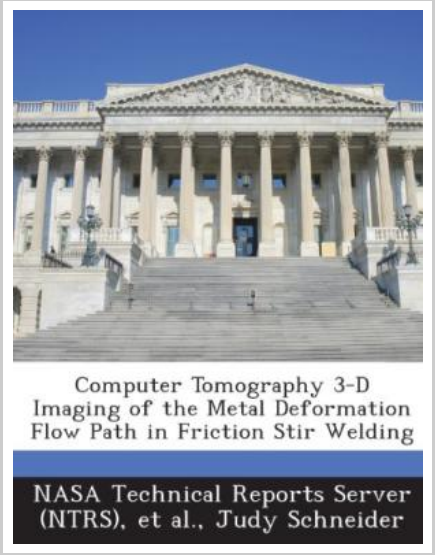

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Computer Tomography 3-D Imaging of the Metal Deformation Flow Path in Friction Stir Welding (Paperback)

By Judy Schneider

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.In friction stir welding (FSW), a rotating threaded pin tool is inserted into a weld seam and literally stirs the edges of the seam together. To determine optimal processing parameters for producing a defect free weld, a better understanding of the resulting metal deformation flow path is required. Marker studies are the principal method of studying the metal deformation flow path around the FSW pin tool. In our study, we have used computed tomography (CT) scans to reveal the flow pattern of a lead wire embedded in a FSW weld seam. At the welding temperature of aluminum, the lead becomes molten and is carried with the macro-flow of the weld metal. By using CT images, a 3-dimensional (3D) image of the lead flow pattern can be reconstructed. CT imaging was found to be a convenient and comprehensive way of collecting and displaying tracer data. It marks an advance over previous more tedious and ambiguous radiographic/metallographic data collection methods.

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