

Center for Friction Stir Processing (CFSP)

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Littoral Combat System with Improved Welding Technologies

The Center for Friction Stir Processing's (CFSP's) research on Friction Stir Welding (FSW), stir spot welding and friction stir structural design and application has resulted in significant improvements to weld strength and durability by, among other things, replacing fusion welds and rivets. Over 12 miles of FSW has been used to fabricate the Littoral Combat Ship (LCS), the USS Freedom, that was commissioned in September of 2006.

The welded aluminum panels for the superstructure were fabricated by Friction Stir Link, Inc. and delivered to Marinette Marine for final assembly. "The collaboration between the CFSP and our company has contributed to the success of the implementation of FSW on the LCS Freedom"

stated John F. Hinrichs, Founder and Vice President of Technology, FSL, Inc. FSL has opened a new production facility in Slidell, LA to support continued production of the LCS.

In 2009, this technology was awarded the Alexander Schwarzkopf Prize for Technological Innovation by the I/UCRC Association.

Economic Impact: The use of the solid-state friction stir welding process has resulted in improved strength and fatigue life, reduced distortion, an economical, robust, and repeatable process.

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The USS Freedom.

