

## عنوان مقاله:

Microstructural characterization of Fe-Al composite layers fabricated by plasma spraying and friction stir processing

## محل انتشار:

هفدهمین کنفرانس ملی جوش و بازرسی و هشتمین کنفرانس ملی آزمایش های غیرمخرب (سال: 1395)

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## خلاصه مقاله:

The effects of pass numbers on microstructure of Fe-Al hybrid surface composites fabricated via plasma spraying and friction stir processing (FSP) were investigated. Al-Fe as-sprayed surfaces were subjected to different one to four FSP passes. Metallographic examinations and electron backscatter diffraction (EBSD) were used to analyze the microstructure of different FSPed zones. After applying the second FSP pass, Widm nstatten ferrite plates were formed from recrystallized austenite grains in stir zones (SZs) and heat affected zones (HAZs). By increasing the pass numbers, these grains were widened due to increasing the diffusivity of carbon and lengthened due to increasing heat inputs and increasing the microstructure anisotropy by producing more dislocations. These grains were widened by increasing the pass numbers, due to increase the diffusivity of carbon and lengthened due to high heat inputs and microstructural anisotropy by producing more dislocations. The microstructures of retreating side were also consisted of Widm nstatten ferrite. EBSD analysis showed that no specific crystallographic texture was formed in the SZ as a result of FSP.

## کلمات کلیدی:

Hybrid surface composite, Plasma spraying, Friction stir processing, Widm nstatten ferrite, Stir zone, Heat affected zone.

## لینک ثابت مقاله در پایگاه سیویلیکا:

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