

## عنوان مقاله:

Application of Eddy Current Non-destructive Evaluation for Detection of Undesirable Microstructures in the Production of Dual Phase Steels

## محل انتشار:

دوازدهمین کنفرانس ملی مهندسی ساخت و تولید ایران (سال: 1390)

تعداد صفحات اصل مقاله: 6

## نویسندگان:

S. Ghanei - *Department of Material Science and Metallurgical Engineering, Engineering Faculty, Ferdowsi University of Mashhad, Mashhad, Iran*

M Kashefi - *Department of Material Science and Metallurgical Engineering, Engineering Faculty, Ferdowsi University of Mashhad, Mashhad, Iran*

M Mazinani - *Department of Material Science and Metallurgical Engineering, Engineering Faculty, Ferdowsi University of Mashhad, Mashhad, Iran*

A Saheb Alam - *Department of Material Science and Metallurgical Engineering, Engineering Faculty, Ferdowsi University of Mashhad, Mashhad, Iran*

## خلاصه مقاله:

Dual phase steels (DPS) are being increasingly used by automotive industries to achieve weight reduction and fuel saving. DPS have a composite type microstructure consisting of a hard second phase (martensite) embedded in a ductile matrix (ferrite). It is therefore possible to obtain combination of good ductility and high strength. Determination of phase percentages is a key factor in achieving the proper mechanical behavior of DPS. This can be evaluated by the Eddy current testing (ECT), nondestructively. ECT is one of the oldest methods of non-destructive testing but the most modern application of ECT is in microstructural inspections. ECT can inspect all parts in the shortest possible time in a production line. In this work influence of different ferritemartensite percentages on the output signals of ECT was studied by using Fourier transformation. Higher martensite percentage decreases the magnetic permeability of the material and results in the decrease in ECT outputs.

## کلمات کلیدی:

Composite type microstructure; Dual phase steels; Eddy current testing; Fast Fourier transformation; Ferrite-martensite percentage; Harmonic analysis; Intercritical annealing temperatures; Non destructive evaluation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/212533>



