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**Abstracts****OXINITROCARBURISING – ECOLOGICAL TECHNOLOGY***E. Ghelec, L. Druga***Keywords:** *oxinitrocarburising, wear, fatigue, resistant layers*

Oxinitrocarburising is a thermochemical process performed in vertical, chamber or fluidized bed furnace in a gaseous atmosphere with C and N potentials and oxidants components at a temperature range of 530-600<sup>0</sup> C for parts and tools made by low and high alloy steel, carbon steel or cast iron.

The atmosphere composition determines the tribological and corrosion layers properties due to high hardness, increased scuffing, wear and fatigue resistance, aesthetic appearance of surface, depending on steel grade and oxinitrocarburising techniques.

**TROUBLE-SHOOTING GUIDE FOR FURNACE ATMOSPHERES USED IN ANNEALING OF ELECTRICAL STEELS***M. S. Stanescu, A. R. Palermo, T.S. Hussey***Keywords:** *annealing, electrical steels, trouble-shooting guide*

The atmosphere reactions and the cause and effect relationship in annealing of electrical steels, with particular reference to nitrogen and hydrogen atmospheres, are reviewed. Examples of the annealing cycles and recommended atmospheres for annealing of Extra Low Carbon (ELC) and Ultra Low Carbon (ULC) steels are included. This guide presents an approach to solving some common atmosphere related problems encountered in annealing of electrical steels. Solutions to the main problems encountered in the atmospheres used are recommended, based on practical field experiences.

**CONSIDERATIONS CONCERNING SURFACE ENGINEERING***G. Vermesan, G. Negrea, H. Vermesan, M. Vlad***Keywords:** *surface engineering, exploiting properties*

This paper reviews some aspects regarding the concept of surface engineering from its first definition until present and shows the development tendencies of the surface engineering technologies. The main results of surface engineering technologies is increasing endurance and improving of the exploiting properties.

**THE CORRECTION OF THE CARBON POTENTIAL MEASURED BY OXYGEN PROBE***P. Alexe, L. Manta, L. Druga***Keywords:** *carbon potential, oxygen probe, carburising layers*

In this paper is shown the using of the direct method for carbon potential determining in view of periodical correcting of the carbon potential measured by oxygen probe. The correction are depending on process type, carbon potential and time. Also are characterized different methods for carbon potential analysis.