

ABSTRACT

Master's thesis: 92 pages, 36 drawings, 15 tables, 43 sources of literature.

Aim: study of the structure,

phase composition and properties of the surface layers of steel 3 after gradual electric-spark alloying by chromium, nickel and graphite.

Research methods: microstructural, microhardness, X-ray, mass transfer kinetics analysis and tests for wear resistance.

Research subject: strength of the surface layers of the steel 3 after the electric-spark alloying by chromium, nickel and graphite anodes in different sequences.

Scientific novelty: first found that applying Reorder chromium,

nickel and carbon steel during electric-doping Article 3

leads to the formation of coating thickness of 50 microns- 85

microns with increased to 7.2 GPa - 8.5 GPa and microhardness increased in 5 times

- 6 times for durability the presence of a layer of doped iron carbide,

chromium and nickel.

Practical meaning: coverage received during the serial electric-doping Ni-, Cr-,

C- anodes by new technological regimes are complex high physical and

mechanical properties, providing the ability to use them for machining parts

working in conditions of friction and contact stress with the aim extension

operation.

GRADUAELECTRIC-SPARK ALLOYING, STEEL3,NICKEL,
CHROMIUM, GRAPHITE, FORMATION OF CARBIDES,FUNCTIONAL
COATINGS