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STEP

AUTHOR: (8) Polukarov, Yu. M.

TITLE

(6) Production of electroplated coatings with special magnetic properties

SOURCE

(15) Elektroliticheskoye osazhdeniye splavov, Mosk. dom nauchno-tekh. propagandy. Moscow, Mashgiz, 1961, 57-75

TEXT

This is a review of the progress achieved in the field of the electrolytic deposition of both magnetically soft and hard alloys, supplemented by investigations carried out by the author. The mechanism is discussed of the electrodeposition from different electrolytes of nickel-cobalt and of cobalt-tungsten alloys with a high coercive force, and also the influence of the composition, of the temperature and of the pH of the electrolyte and of the current density on the physicochemical properties of the alloy. The crystal structure of Co-W alloys was determined from X-ray photographs and it is assumed that Co_3W , an intermetallic compound, is formed after the deposit has been heated to 600°C . The production of good magnetically soft alloys is more complex and has been less investigated. The author deposited iron-nickel alloys from electrolytes containing either hydrochloric or sulfuric acid, and the lowest coercive

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force for an alloy deposited from the latter at a current density of $2\text{A}/\text{cm}^2$ was equal to 0.4 oersted. There are 12 figures and 6 tables, and 29 references.

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