

following form: $Q_l = Q_s + Q_g + Q_{ev}$, where $Q_s = 4\pi R\lambda_l(T_s - T_f)$ – the amount of heat entering the film of the solution from the heated granule; $Q_g = 2\pi R\lambda_g(T_f - T_g) \cdot Nu_g$ – the amount of heat received from the air; $Q_{ev} = J_w \cdot L$ – heat of evaporation. The heat of crystallization and dissolution in the heat balance can be neglected. Evaporation rate $J_w = -dm_w / d\tau = 2\pi R D_{vg} (\rho_{sat} - \rho_{v\infty}) Sh_g$.

Also in the process is the absorption of part of the solution into the pores, partial dissolution and recrystallization of the surface layer of microcrystals with each new cycle.

Conclusions. The physical model of the process of formation of a solid layer of microcrystals on the surface of the granule due to mass crystallization allows to justify mathematical model of formation of granules in the granulator of the fluidized bed to calculate the optimal modes of the process.

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PHYSICO-CHEMICAL AND TRIBOLOGICAL PROPERTIES OF NITROGENED LAYERS OF STRUCTURAL STEEL

The presented work is a continuation of the problem of solving practical and theoretical principles of vacuum-diffusion gas-discharge processes, in which the mechanisms of formation of modified surface layers of metals under the interaction of regime (temperature, saturation medium, medium pressure in gas-discharge chamber and saturation time) and energy (current density) and voltage at the electrodes of the discharge chamber) parameters. The authors rely on the developed fundamentally new energy model of the nitriding process in the glow discharge, the main feature of which is the position of the priority of those subprocesses in strengthening the surface layers of metals, which in specific operating conditions of parts are most appropriate [1].

In the planned cycle of works, fundamentally new provisions of the theory of diffusion gas-discharge processes of ionic nitriding of metals are formed, which are based on the priority of energy approaches [1]. From such positions theoretical processes of diffusion gas-discharge methods of ionic nitriding were not considered by domestic and foreign researchers, but they open absolutely new opportunities of studying of the thin mechanism of the phenomena and their practical application in the field of strengthening of metal surfaces.

The influence of regime parameters on the results of BATR (anhydrous nitriding in a glow discharge) of metal alloys has been studied in many works, for example, and energy parameters, with a few exceptions, are not considered. Ignoring the main quantitative characteristics of the glow discharge, which act as intensifiers of elementary subprocesses that are responsible for the structure and properties of the nitrated layer is, in essence, the loss of control over the BATR process.

At BATR on a metal surface the nitride layer representing ϵ -phase (Me₂-3N) or γ -phase (Me₄N) and a diffusion zone is formed - the zone of internal nitriding - nitrogenous α -solid solution

($\alpha - \text{Me [N]}$) The nitride zone containing only the γ -phase is characterized by high ductility, and the zone containing the ϵ -phase has much lower ductility but higher corrosion resistance. + γ), which has increased, compared to the single-phase zone, fragility. However, during cavitation, erosion or at high friction speed ($v_T > 3 \text{ m/s}$), the two-phase zone ($\epsilon + \gamma$) increases the stability characteristics of the reinforced of steel surfaces in corrosive environments both due to increased corrosion resistance of the surface and due to lower adhesion of friction surfaces. friction.

Therefore, a compatible combination of mode and energy parameters of BATR, it is possible to achieve such physicochemical characteristics of the surface nitrated layer that meet the operational requirements for the part.

Literature:

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АНАЛІЗ АСОРТИМЕНТУ ВЗУТТЄВИХ КЛЕЇВ ДЛЯ ОСНОВНОГО КРІПЛЕННЯ

Shoe adhesivs for the main fixing analisis

This article considers a wide range of adhesive-solutions of different world manufacturers for the operations of adhesive tightening and gluing of soles and evaluates the technological parameters of gluing recommended by adhesive suppliers. To find the optimal bonding parameters, it is recomended to conduct additional research on the existing laboratory base.

У взуттєвому виробництві для основного кріплення застосовуються переважно клеї-розчини на основі таких плівкоутворювачів:

- поліхлоропреновий каучук (наїріт) (ПХП);
- поліуретан (ПУ).

Сучасний ринок пропонує широкий асортимент таких клеїв різних виробників. Щоб правильно зорієнтуватись у такому різноманітті, слід врахувати масу особливостей – ціну, логістику, якість, технологічність тощо. Для розуміння широти запропонованого асортименту була складена таблиця доступних для вітчизняних взуттєвиків клеїв:

Основний плівко- уворювач	Торгова марка (на- зва)	Виробник	Країна-виробник
Поліуретан (ПУ)	Poligrip-327		Італія
	Poligrip-999		Італія
	SAR 06 W	KENDA FARBEN	Італія
	SAR 306	KENDA FARBEN	Італія
	И-70		Китай