COMPARATIVE CORROSION RESISTANCE OF STRUCTURAL MATERIALS IN A PITCH GRANULATOR

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Due to the clogging of the holes of the nozzle bar and filters with sediment decreases the volume of variable production. During the study, samples of sediments were taken, which were analyzed for group composition:

– content of insoluble toluene substances – 52 %;

– content of insoluble substances in quinolone – 37 %;

– ash – 3.5 %.

In addition, selected samples were analyzed on the microscope «Neophot-21» in reflected light, according to the method in reflected rays (polarized). Based on the results of the analysis of samples found: the content of insoluble in quinolone and toluene substances in the filter sludge sample before granulation (35.4 and 50 %) indicates the presence of highly paralyzed particles of 27÷48 μm, formed, possibly by passing resin through tubular furnace, or during oxidation in a cube-reactor. High ash content of the precipitate on the filter before granulation (2.59 %) was noted, which is caused by the adhesion of ash particles on the sediments during filtration.

Ash particles with the correct pointed shape, 5÷30 μm in size, which can cause abrasive wear have been identified. Microscopic studies of the precipitates from the filter before Legrand showed that the size of highly pyrolyzed particles was 80÷100 μm.

One of the most effective methods of creating coatings with high mechanical and physicochemical properties are diffusion surface alloying of metal under conditions of self-propagating high-temperature synthesis.

The technology of obtaining coatings in the conditions of self-propagating high-temperature synthesis, combined with chemical transport reactions, is devoid of these shortcomings and provides high stability of processing results.Analysis of the test results of steel samples 45 with alloyed Cr, Ti, Si alloy coatings installed in the Legrand granulator showed high corrosion resistance of alloyed aluminum coatings obtained under SHS conditions.

References

1. Surface strengthening of working materials in the conditions of complex influence of aggressive substances: monograph / B.P. Sereda, L.P. Bannikov, S.V. Nesterenko, O.S. Gaidaenko and others. DDTU, 2019. 173 p.