

- Название: Functional Properties of Fe–Mo and Fe–Mo–W Galvanic Alloys
- Другие названия: Функциональные свойства гальванических сплавов Fe–Mo и Fe–Mo–W
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- Реферат: The influence of the modes of electrodeposition on the morphology, topography, and structure of the galvanic alloys of iron with molybdenum and tungsten is discussed. It is shown that the increase in the corrosion resistance of Fe–Mo and Fe–Mo–W coatings in acid and neutral chloride-containing media is caused both by the elevation of their passivating ability caused by the process of alloying components and by the formation of globular surfaces with homogeneous chemical composition. The microhardnesses of Fe–Mo and Fe–Mo–W galvanic alloys prove to be 2–3 times higher than the microhardnesses of the substrates made of low-alloy steel, which can be explained by the formation of amorphous structures. The results of investigations and tribological tests show that it is reasonable to apply the coatings of double and triple iron alloys in order to reduce wear in friction couples and to increase the

corrosion resistance and mechanical strength of the surfaces, which makes them promising for the repair and restoration technologies.

Изучено влияние методов электроосаждения на морфологию, топографию и структуру гальванических сплавов железа с молибденом и вольфрамом. Показано, что рост коррозионной стойкости покрытий Fe–Mo и Fe–Mo–W в кислых и нейтральных хлоридсодержащих средах обусловлен увеличением их способности к пассивации в присутствии легирующих компонентов и формированием глобулярной равномерной по составу поверхности. Микротвердость гальванических сплавов Fe–Mo и Fe–Mo–W возрастает в 2-3 раза по сравнению с показателем подложки из низколегированной стали за счет формирования аморфной структуры. Результаты исследований и трибологических тестов показали целесообразность применения двойных и тройных сплавов железа для снижения износа в парах трения и увеличения коррозионного сопротивления и механической прочности поверхностей, что делает их привлекательными для технологий восстановления и упрочнения поверхностей.

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