Short Communication

Effect of β -cyclodextrin as Organic Additive on Pulse Electrodeposition of Nanocrystalline Ni-W Coating

Qiangbin Yang^{1,2,3}, Yi He^{1,*}, Yi Fan^{1,2,3}, Yingqing Zhan^{2,3,*}, Ying Tang^{2,3}

¹State Key Lab of Oil and Gas Reservoir Geology and Exploitation (Southwest Petroleum University), Chengdu 610500, P. R. China

²Oil & Gas Field Applied Chemistry Key Laboratory of Sichuan Province (Southwest Petroleum University), Chengdu 610500, P. R. China

³School of Chemistry and Chemical Engineering, Southwest Petroleum University, Chengdu 610500, P. R. China

*E-mail: heyi007@163.com, 327814719@qq.com

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Nanocrystalline nickel-tungsten (Ni-W) coatings was obtained by pulse electrodeposition in the plating bath with and without containing β -cyclodextrin (β -CD). The mirco-structure and morphologies of coatings were characterized by energy dispersive spectrometer (EDS), X-ray diffraction (XRD) and scanning electron microscopy (SEM). It was found that smaller grain size and more compact surface structure can be realized by introduction of β -CD, which had no influence on the compositions of the coating. More importantly, the coating had better anticorrosion and mechanical performance.

Keywords: β -cyclodextrin; Ni-W; nanocrystalline materials; corrosion; pulse electrodeposition.

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