

Ni-P-无机类富勒烯WS₂纳米材料化学复合镀层的制备及其摩擦学性能初步研究

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摘要 用化学复合镀技术制备了含无机类富勒烯硫化钨纳米材料的Ni-P-(IF-WS₂)复合镀层。用环-块摩擦实验测试了Ni-P-(IF-SW₂)的摩擦学性能。研究表明 它比与Ni-P, Ni-P-(层状2H-WS₂)和Ni-P-石墨复合镀层具有更高的耐磨性能和更低的摩擦系数。分析了无机类富勒烯纳米材料改善镀层摩擦学性能的机理。

关键词 [富勒烯](#) [纳米相材料](#) [摩擦性能](#) [硫化钨](#) [镍](#) [磷](#)

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Preparation and Tribological Properties of Ni-P Electroless Composite Coating Containing Inorganic Fullerene-like SW₂ Nanomaterials

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Abstract Ni-P composite coating containing inorganic fullerene-like WS₂ nanosize particles was prepared by electroless codeposition. Its tribological performances were evaluated by a ring-on-block wear tester. It was found that the Ni-P-(IF-WS₂) composite coating exhibited both higher wear resistance and lower friction coefficient than Ni-P, Ni-P-(layer 2H-WS₂) and Ni-P-graphite electroless coating. The favorable effects of inorganic fullerene-like nanomaterials on the tribological properties of the composite coating were discussed.

Key words [fullerene](#) [NANOPHASE MATERIALS](#) [TRIBOLOGICAL PROPERTY](#) [WS₂](#) [Ni](#) [P](#)

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