

RESEARCH NOTES

铝阳极氧化膜孔内电沉积银及其抗菌性能

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摘要 Aluminum specimens were anodized in a sulfuric acid bath, then silver was electrodeposited in pores of the anodized aluminum by using alternating current. The anodized aluminum with deposited silver was tested for its antibacterial performance. The results show that the antibacterial rates of the specimens are above 95% against the growth of *E. coli*, *P. aeruginosa*, *S. faecalis* and *S. aureus*. The morphology of the silver in pores of anodized aluminum is characterized by transmission electron microscopy, and the micrographs indicate that silver is assembled in the form of nanowires with a diameter of 10 nm or 25 nm. The nanowires have a structure of parallel bright stripes alternating with parallel dark stripes.

关键词 [electrodeposition](#) [antibacteria](#) [aluminum anodic oxide](#) [nanowires](#)

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Antibacterial Surface Treatment of Aluminum Materials

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Abstract Aluminum specimens were anodized in a sulfuric acid bath, then silver was electrodeposited in pores of the anodized aluminum by using alternating current. The anodized aluminum with deposited silver was tested for its antibacterial performance. The results show that the antibacterial rates of the specimens are above 95% against the growth of *E. coli*, *P. aeruginosa*, *S. faecalis* and *S. aureus*. The morphology of the silver in pores of anodized aluminum is characterized by transmission electron microscopy, and the micrographs indicate that silver is assembled in the form of nanowires with a diameter of 10 nm or 25 nm. The nanowires have a structure of parallel bright stripes alternating with parallel dark stripes.

Key words [electrodeposition](#); [antibacteria](#); [aluminum anodic oxide](#); [nanowires](#)

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