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Investigation on adhesion strength and corrosion resistance of Ti-Zr aminotrimethylene phosphonic acid composite conversion coating on 7A52 aluminum alloy

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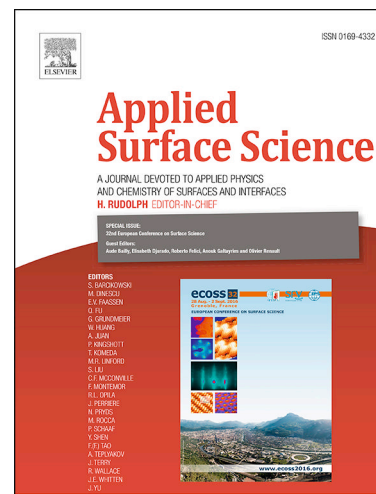
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**Investigation on adhesion strength and corrosion resistance of Ti-Zr
aminotrimethylene phosphonic acid composite conversion coating on 7A52
aluminum alloy**

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Abstract: In this paper, a chromate free conversion coating based on titanium/zirconium salts and aminotrimethylene phosphonic acid (ATMP) was prepared on 7A52 aluminum alloy. The morphology and composition of conversion coating were investigated by test measurements of SEM、EDS、XRD and FT-IR. The adhesion strength between aluminum matrix and subsequent epoxy primer was tested directly. The roughness and wettability of conversion coating were also detected to indirectly characterize the adhesion strength from another side. The electrochemical tests and neutral salt spray tests were also conducted to measure the corrosion resistance of the prepared conversion coating. Results reveal that a uniform and dense

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