

พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

C 617891 : MAJOR METALLURGICAL ENGINEERING

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SOMMIT LERTWEERAWAT : EFFECTS OF SODIUM CARBONATE
SOLUTION ANODIC TREATMENT ON DICHROMATE PASSIVATED
LAYERS OF TIN.

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The main objectives are to study effects of sodium carbonate anodic treatment prior to cathodic treatment on dichromate passivated layers of tin.

The anodic treatment of tin samples were performed in 10 g/l sodium carbonate solution at 25 °C. Current density applied was ranging from 1-67 mA/cm². The anodically treated tin samples were later passivated in aqueous solution containing Na₂Cr₂O₇ and CrO₃ at ratio of 4:1 .

It was found that the anodic treatment at the current density of 40 mA/cm² had profound effects on the compositions of the passivated layers. The chromium oxide's thickness found to be 6 times thicker and the tin oxide's thickness was 3 times thicker and oxygen atoms were detected in the specimen from the surface's depth about 3.6 times and the corrosion resistance was 6 times better than in the sample which had not been anodically treated. The passivated layers were analysed by ESCA and Argon ion sputtering technique and it was found that the sputtering rate of Sn in SnO₂ was 19 Å/min.

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