

عنوان مقاله:

Investigating the formation of intermetallic compounds and the variation of bond strength between Al-Cu layers after annealing in presence of nickel coating on copper

محل انتشار:

دومین کنفرانس بین المللی آلومینیوم (سال: 1391)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

In the present study, the effect of post-rolling annealing heat treatment on the formation of intermetallic compounds between Al-Cu strips, in the presence of nickel coating on the copper strips, was investigated. In addition, the effect of post-rolling annealing and intermetallic compounds on the bond strength of Al-Cu strips was evaluated. In order to prepare samples, copper strips were coated with nickel by electroplating process. After surface preparing, copper strips were placed between two aluminum strips and roll bonded. This method is used for producing Al-Ni-Cu composites. Then the samples were annealed at 773K for 2 h. The formation of intermetallic compounds was studied using energy dispersive spectroscopy (EDS) and X-ray diffraction (XRD), and also the bond strength of Al-Cu strips was investigated using peeling test. The results revealed that by post-rolling annealing of layers, the bond strength between Al-Cu strips decreases dramatically.

کلمات کلیدی:

Intermetallic compounds, XRD, Bond strength, CRB process

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