# Growth inhibition of interfacial intermetallic compounds by pre-coating oriented $Cu_6Sn_5$ grains on Cu substrates

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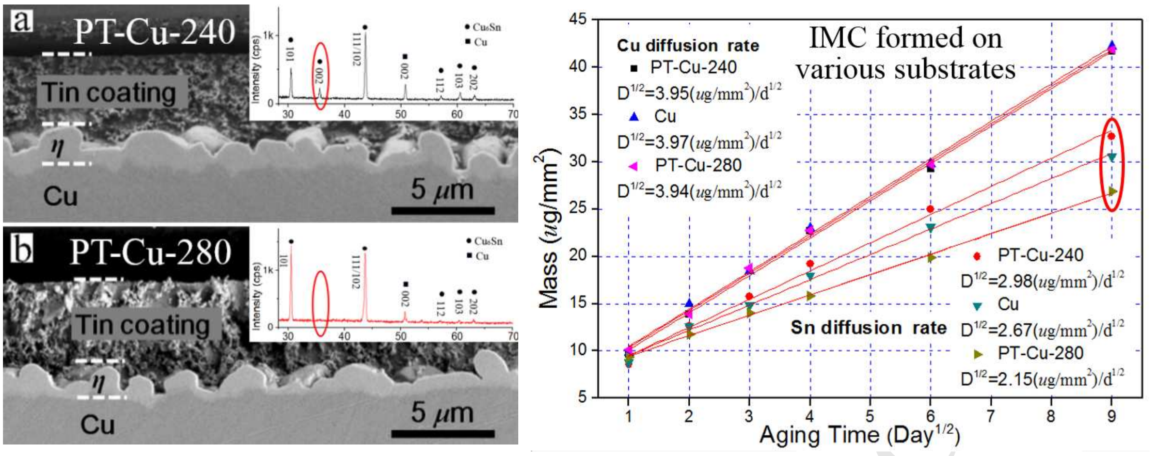
a
PT-Cu-240
Tin coating
η
Cu
5 μm
● Cu6Sn
■ Cu
Intensity (cps)
1k
0
101
002
111/102
002
112
103
202
30
40
50
60
70
b
PT-Cu-280
Tin coating
η
Cu
5 μm
IMC formed on various substrates
Cu diffusion rate
PT-Cu-240
D1/2=3.95(ug/mm2)/d1/2
Cu
D1/2=3.97(ug/mm2)/d1/2
PT-Cu-280
D1/2=3.94(ug/mm2)/d1/2
Sn diffusion rate
PT-Cu-240
D1/2=2.98(ug/mm2)/d1/2
Cu
D1/2=2.67(ug/mm2)/d1/2
PT-Cu-280
D1/2=2.15(ug/mm2)/d1/2
Mass (ug/mm2)
Aging Time (Day1/2)
5
10
15
20
25
30
35
40
45
1
2
3
4
5
6
7
8
9