

Fig. 4.1 Electromigration life time and under 150°C aging time

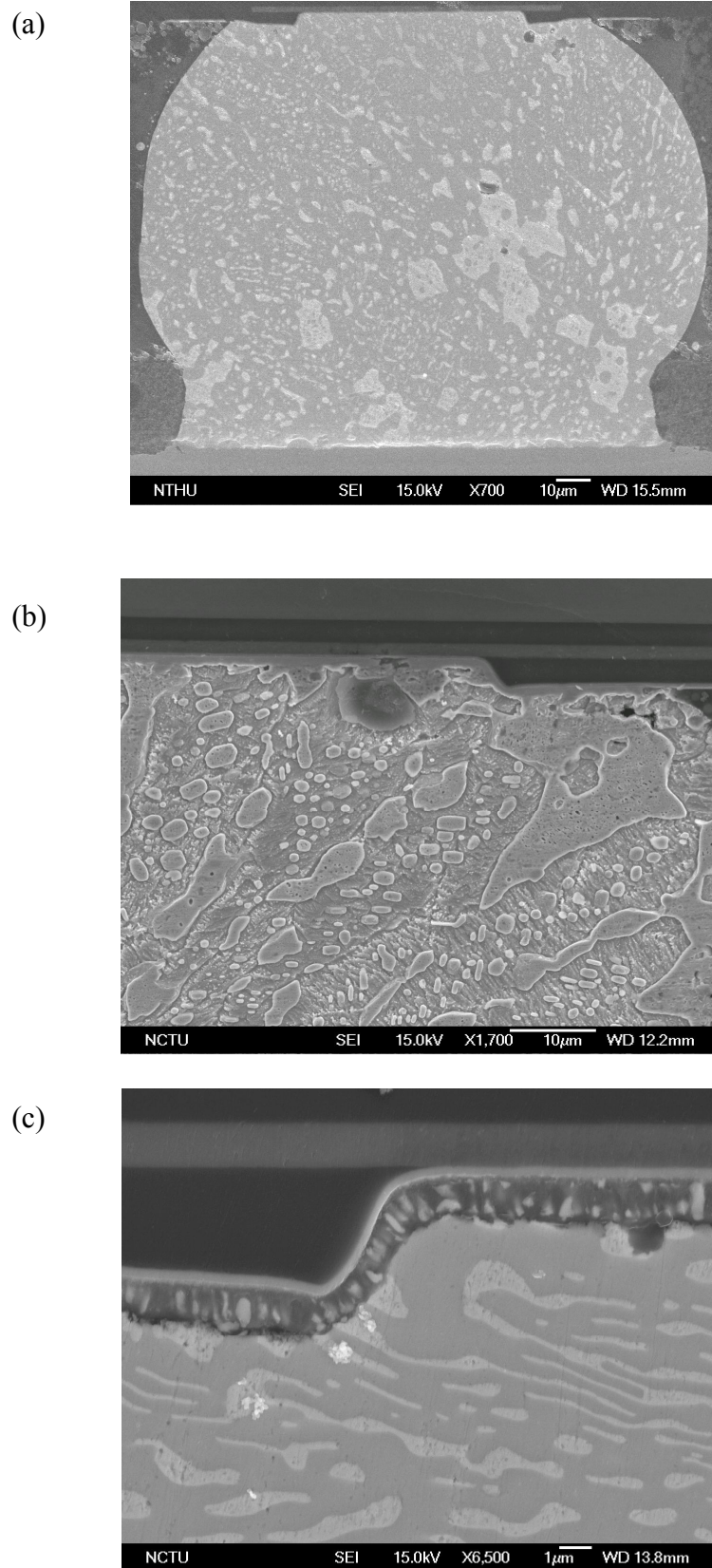


Fig. 4.2 Thin-film UBM bump (a) before aging (b) aging 150°C for 50hrs
(c) aging 150°C for 1000hrs

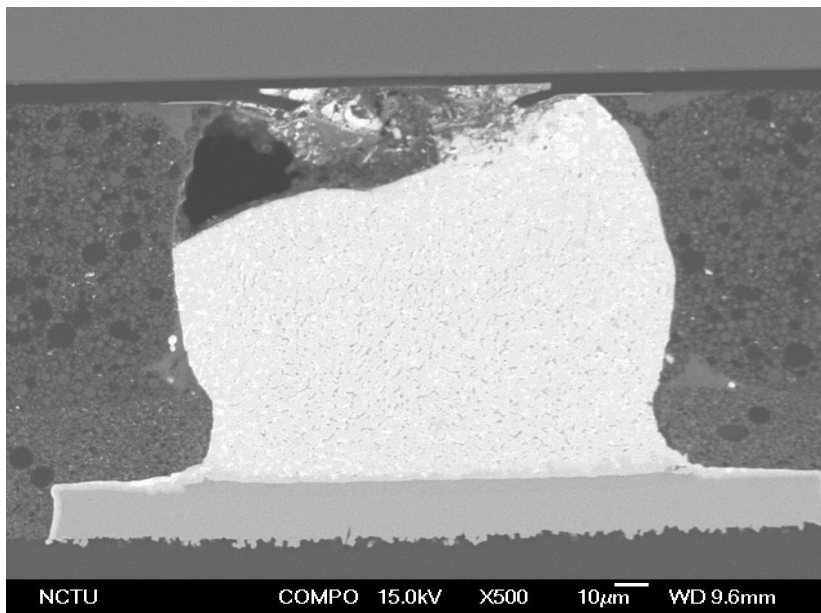


Fig. 4.3 Aging for 300hrs :failure time 33hrs

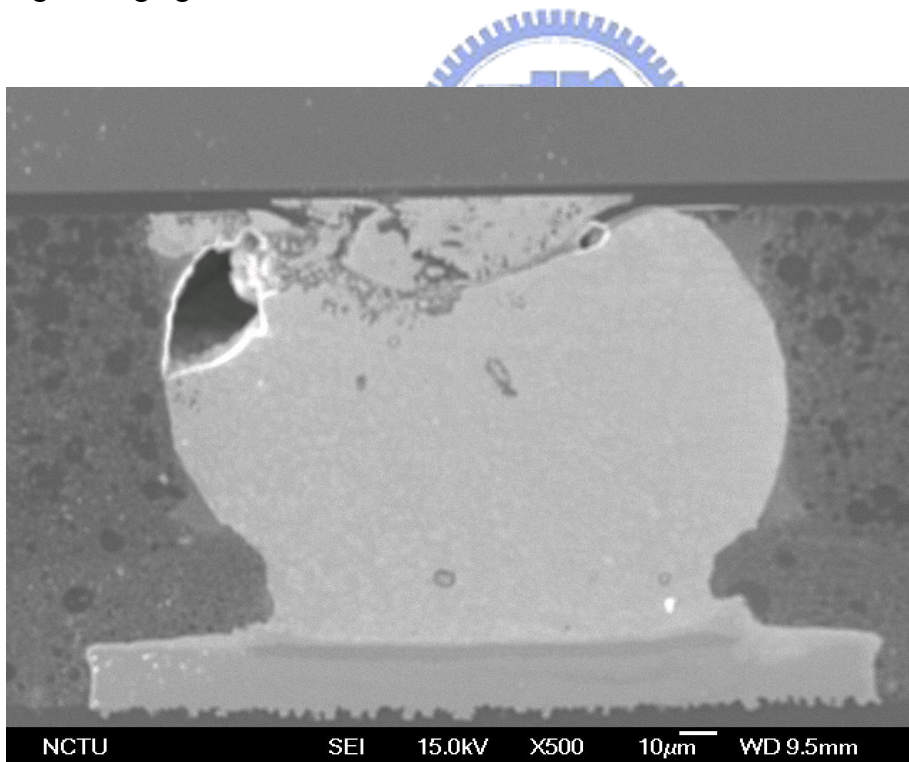


Fig. 4.4 Aging for 500hrs:failure time 3hrs