Electromigration (EM) is one of the main reliability failure mechanisms of integrated circuit interconnects. The continuous scaling of the interconnection dimensions leads to higher operating current densities and temperatures, which accentuates the electromigration failure. Electromigration modelling becomes an important tool for explaining several experimental observations and can provide a stronger basis for design and fabrication of reliable metallization. The main challenge is the diversity of the relevant physical phenomena to take into account and the correlation with experiments.

**Conclusions**

- Model of electromigration was reproduced simplified and adapted to the technology dual damasce Cu line embedded in low-k dielectric of the CO28 technology process.
- Time nucleation can be used now to calibrate existing models based on the critical mechanic stresses to have more realistic predictions.
- Critical stress for the nucleation (calculated just approximately until now) can be evaluated more precisely.

**Perspectives**

- Void growth model and correlations with experiments

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References


