ALD 2026 Supplemental

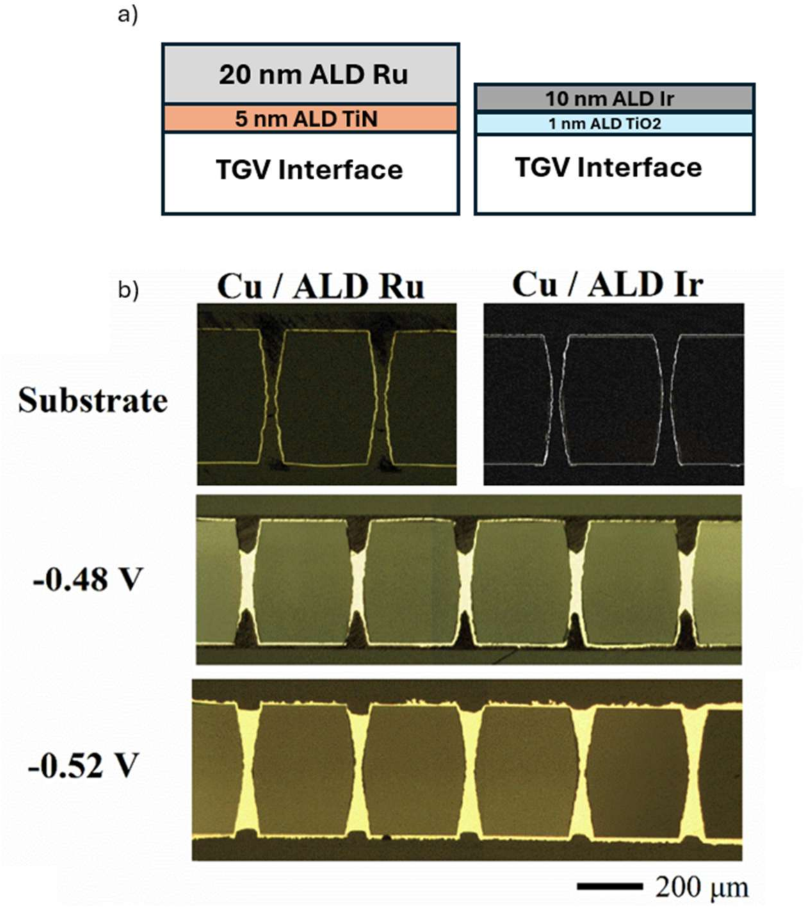

Figure 1: (a) Visual representation of deposited ALD layer stacks. Note that these images are not to scale. (b) Copper fill in 10:1 AR vias with ALD Ir and Ru seed layers; cross sectioned and imaged optically. The image depicts the beginning of Cu nucleation (top), Cu fill beginning in center of the features (middle), and conformal Cu fill (bottom) for both Ir and Ru seed films. Note that the ALD films are not visible in the images. This demonstrates the success of a thin 10nm Ir film as a copper seed layer.

References

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[2] Harris, S., Lindblad, D., Guilmain, M., Gaudreau-Miron, X., Wang, A., Dameron, A., Statekina, I., & Weimer, M. (2025). *12.12 - Enabling High Aspect-Ratio Interconnects for Advanced Packaging of MEMS and Sensors*. CS MANTECH Conference. https://csmantech.org/paper/12-12-enabling-high-aspect-ratio-interconnects-for-advanced-packaging-of-mems-and-sensors/