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Electronic Supplementary Information for JMCC

SUPPORTING INFORMATION

Flexible Inkjet Printed high-k HfO_2-Based MIM Capacitors

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This PDF file includes:

Figs. S1 to S08

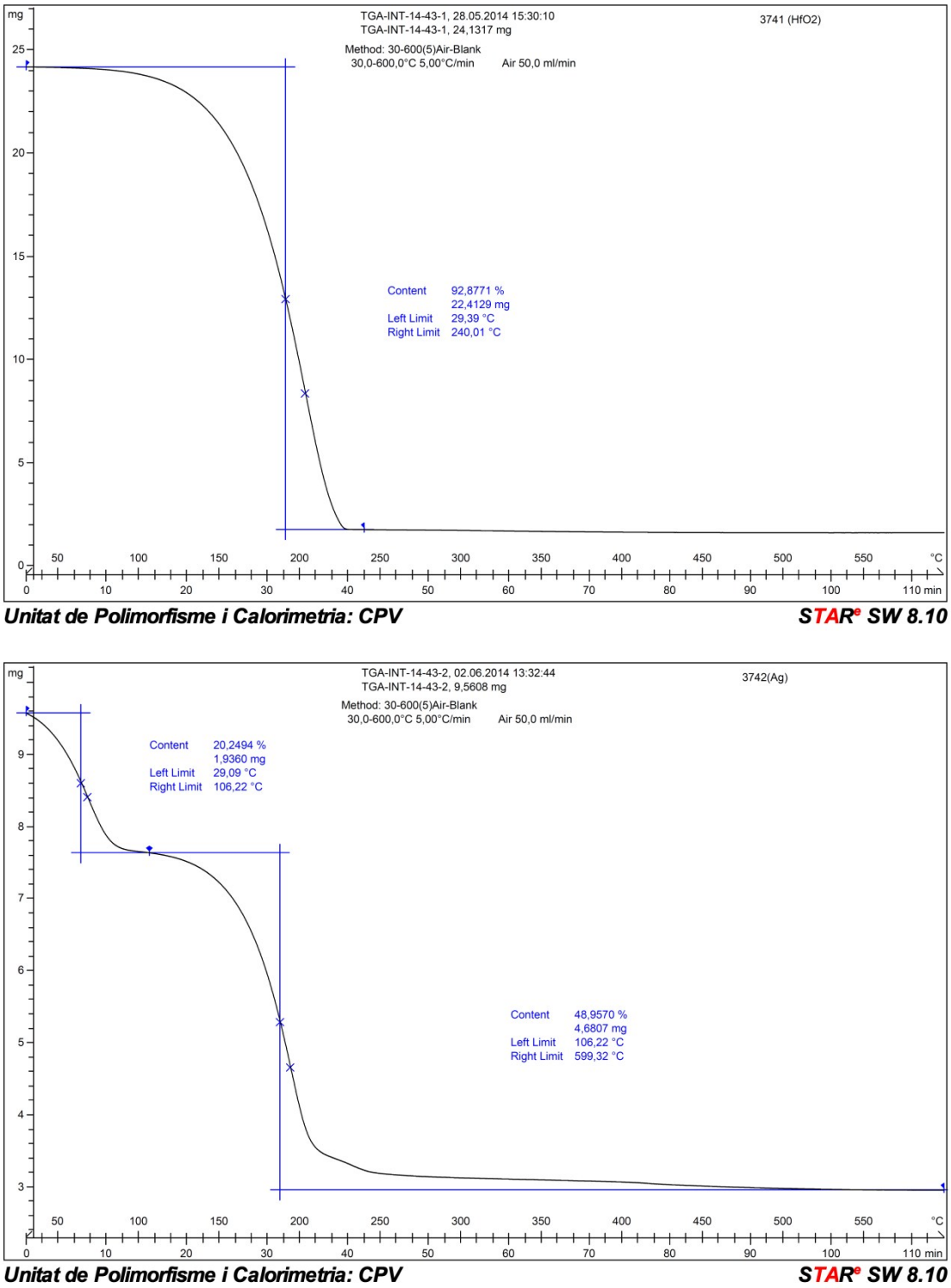
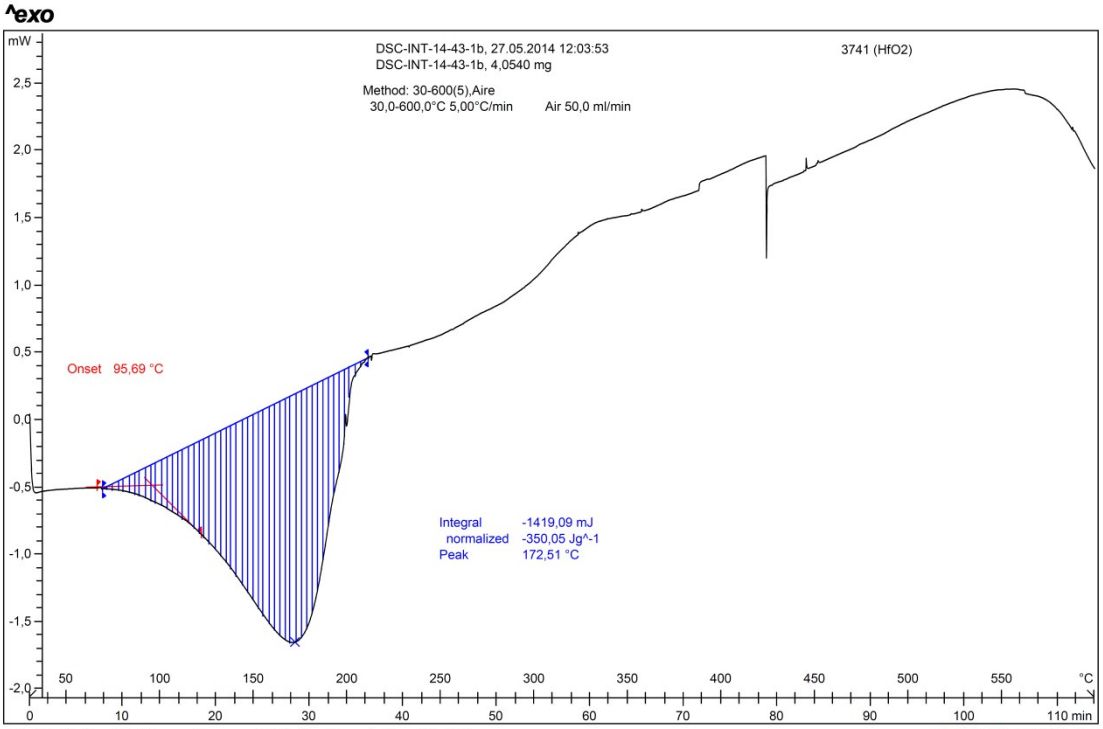


Fig. S1 Thermogravity analysis (TGA) of HfO_2 and Ag inks.



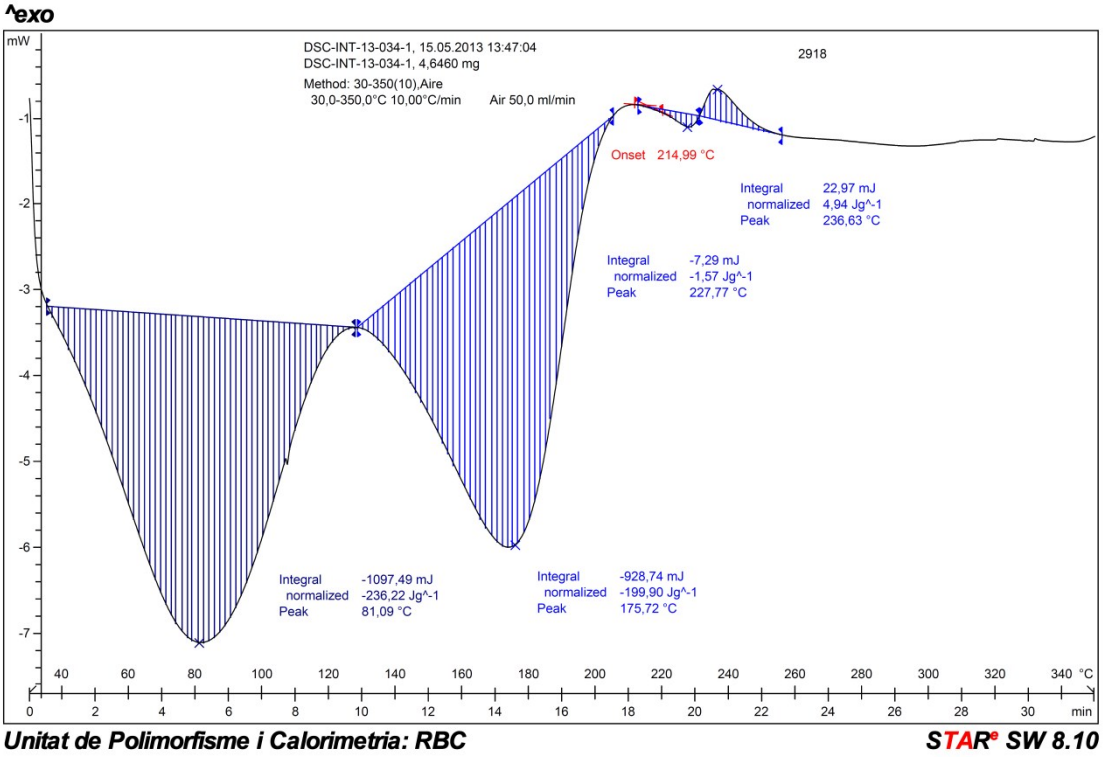


Fig. S2 Differential scanning calorimetry (DSC) measurement of HfO_2 and Ag inks.

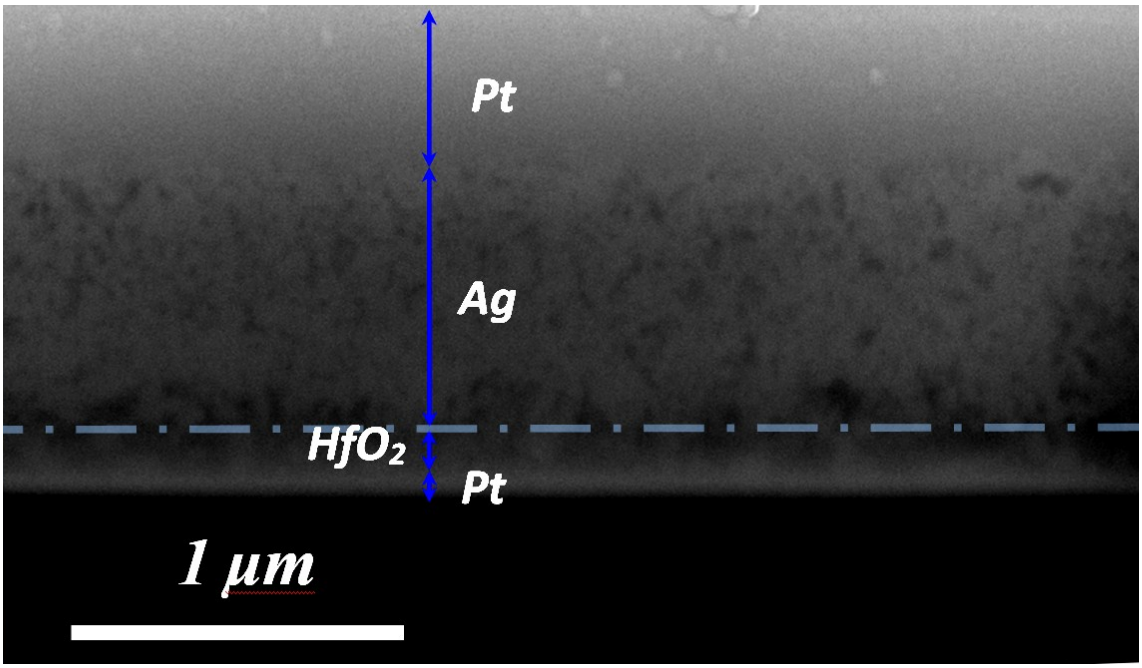


Fig. S3 Cross-section of MIM capacitor by FIB-assisted FE-SEM technique. The as-deposited layers have a Pt bottom electrode thickness of 50 nm, 120 nm for HfO_2 and 700 nm of Ag top contact.

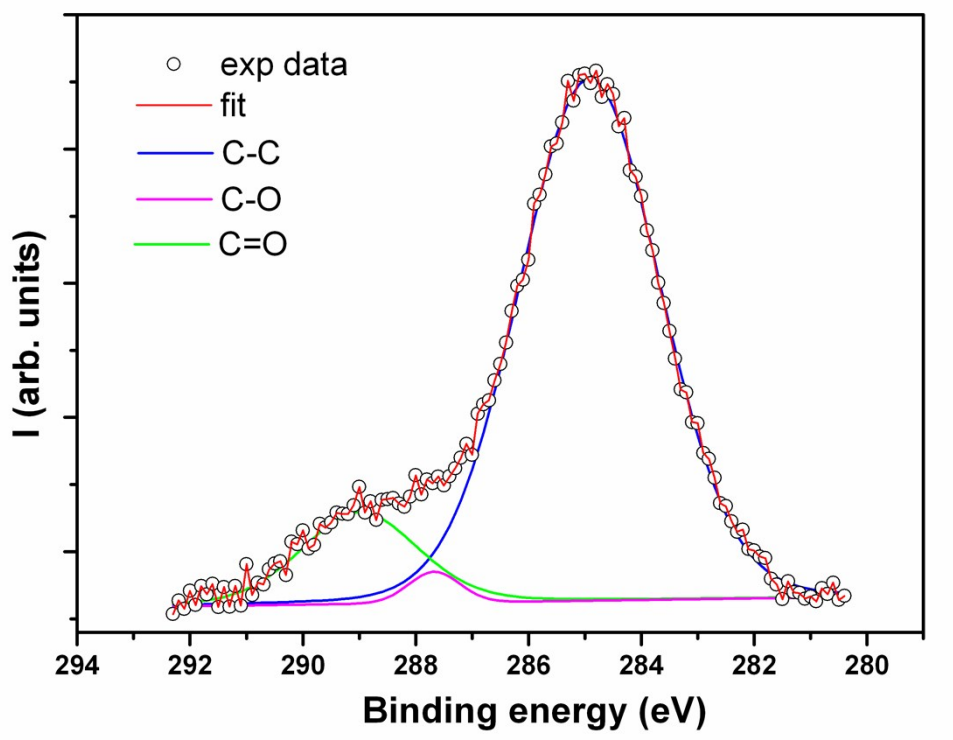


Fig. S4 XPS Binding Energy High-Resolution spectra of C in annealed HfO_2 thin film at 250 °C for 2 h, deposited on Ag bottom contact. The curve represents the experimental data with the corresponding peaks fitting.

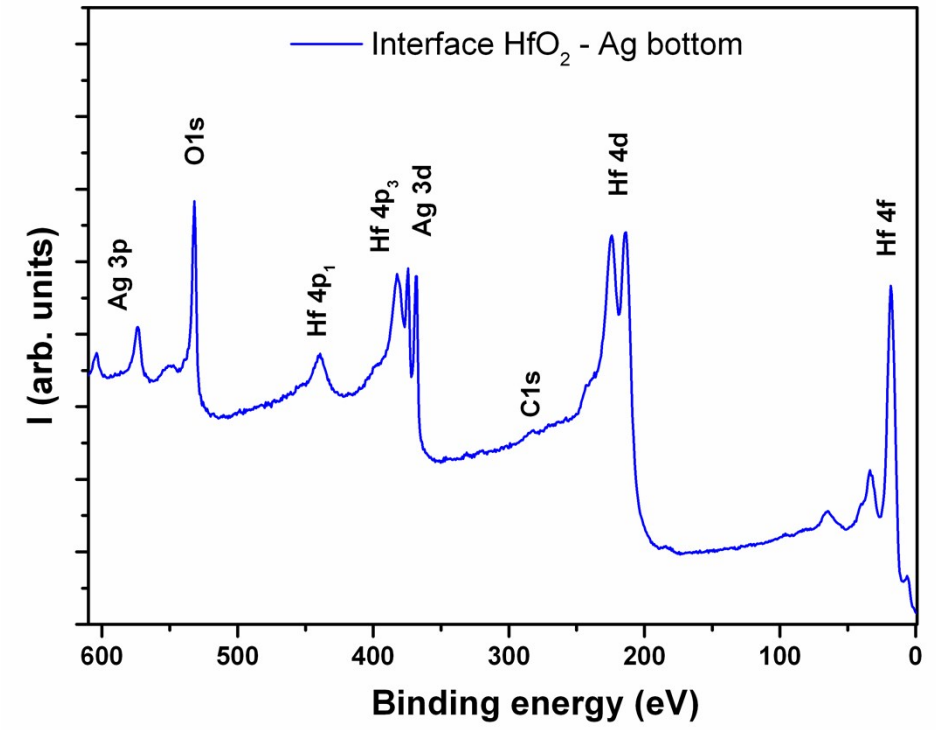


Fig. S5 XPS Binding Energy Survey spectra at the interface of the structure HfO_2/Ag bottom contact.

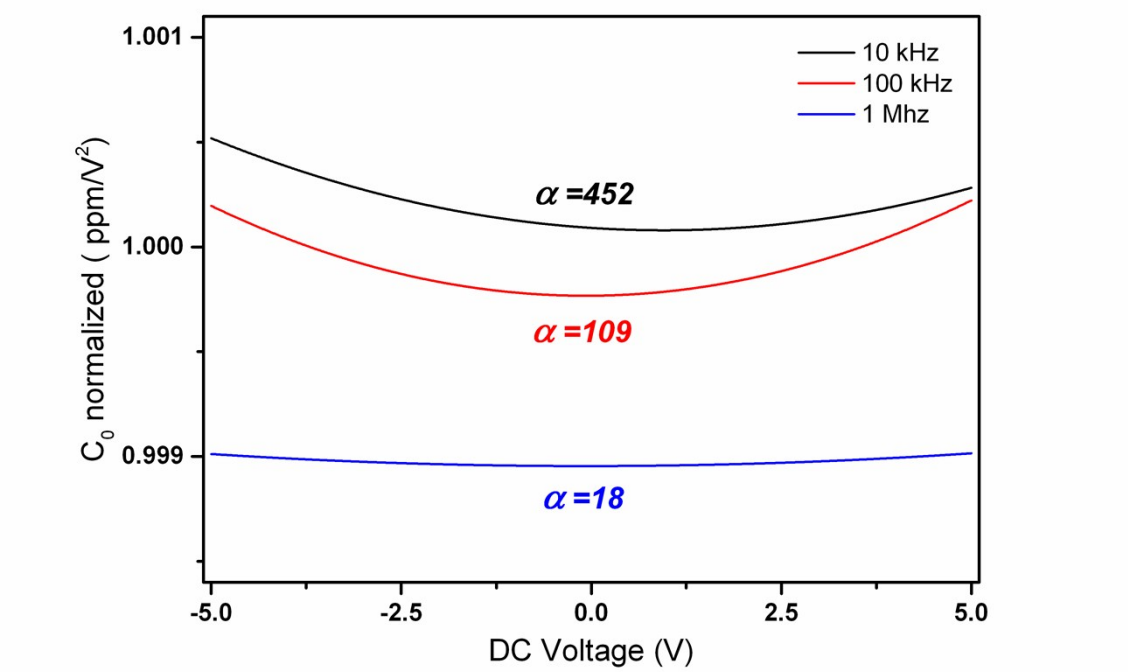
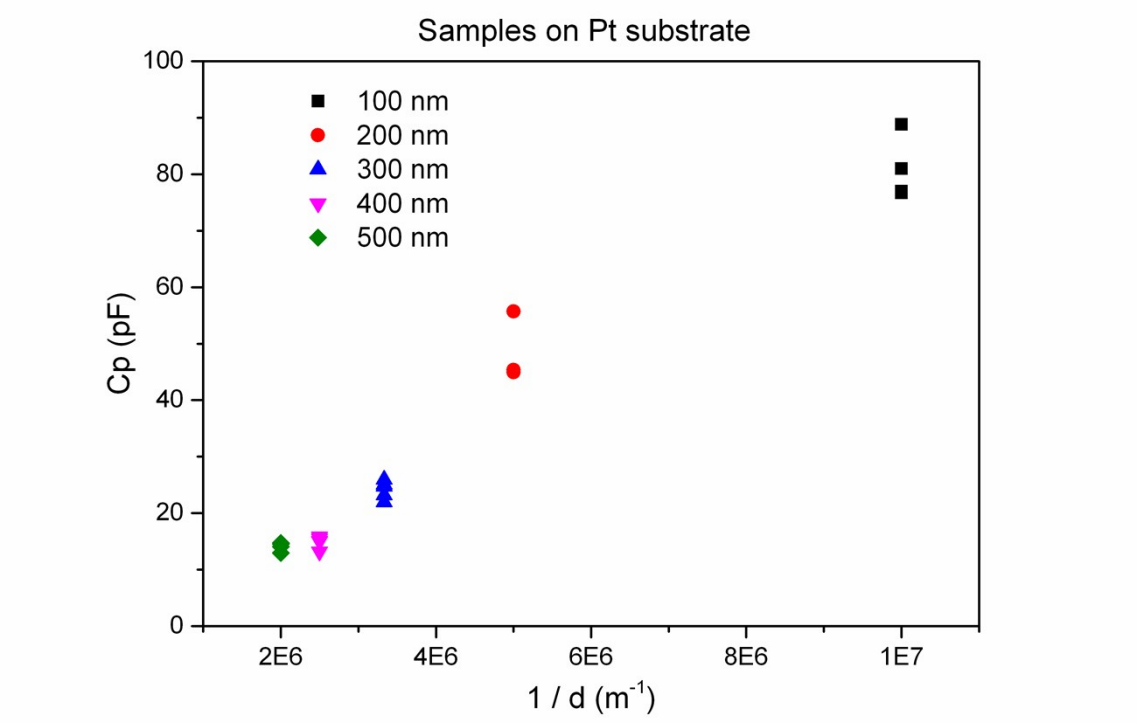


Fig. S6 Normalized capacitance-frequency dependence of an inkjet-printed Ag/HfO_2/Ag MIM capacitor.

a)



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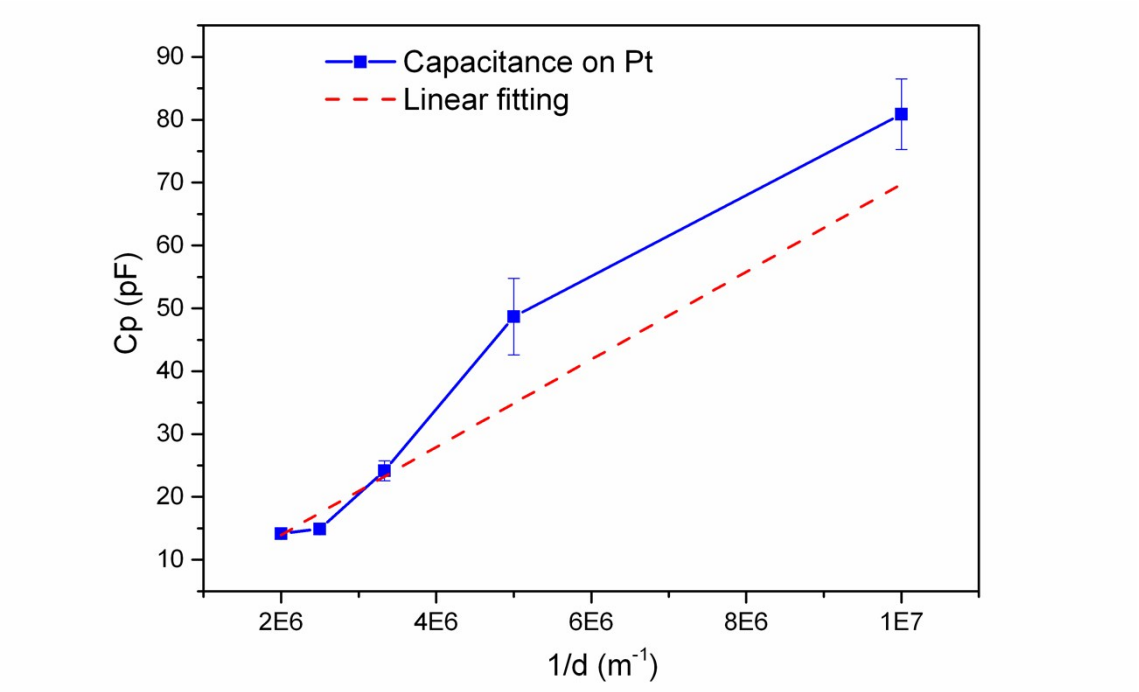
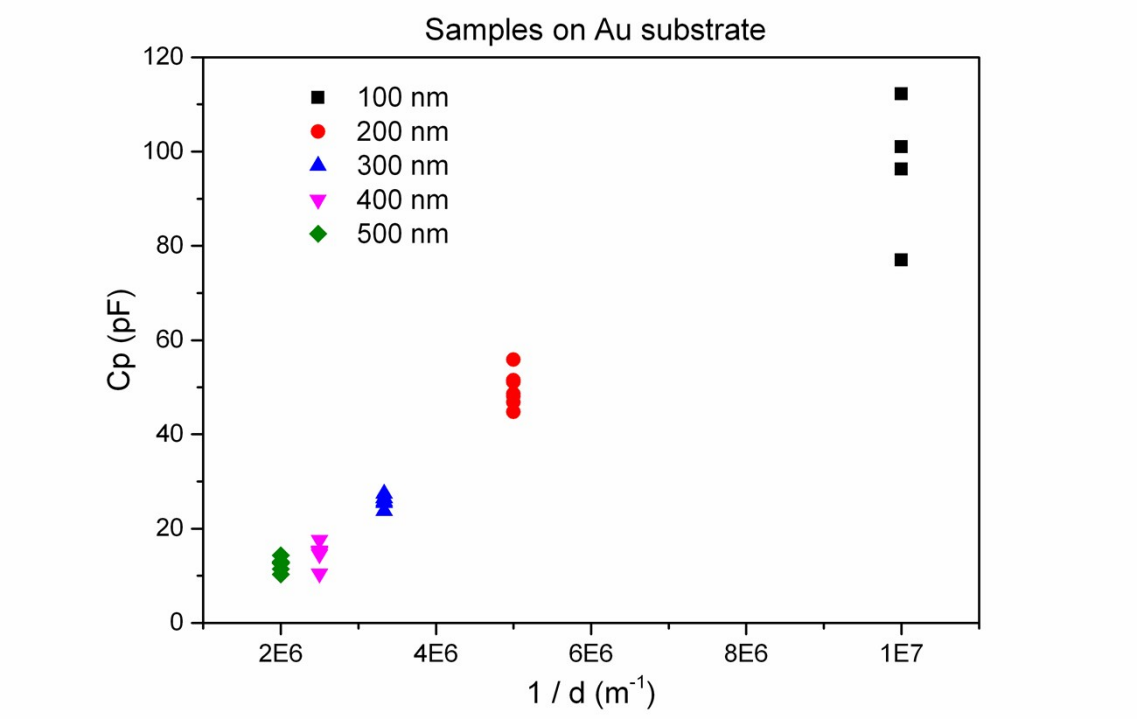


Fig. S7 **(a)** MIM capacitors structure Ag / HfO_2 / Pt with different thickness. **(b)** Linear fitting and curve regression for evaluation of dielectric constant.

a)



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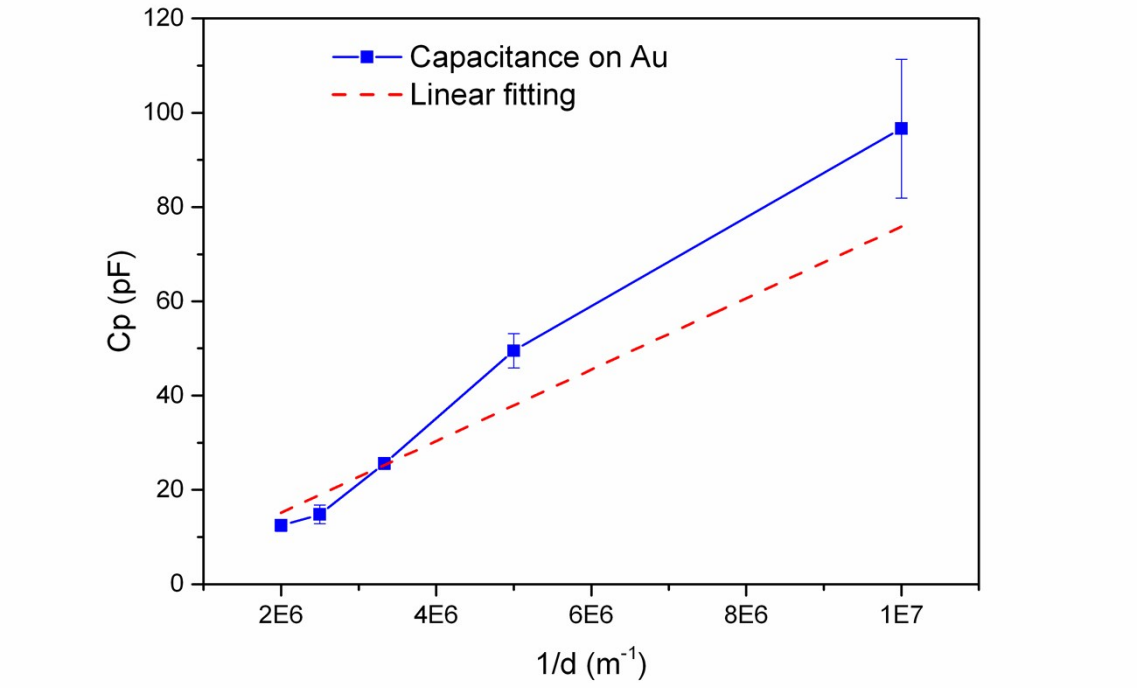

Fig. S08 **(a)** MIM capacitors structure Ag / HfO_2 / Au with different thickness. **(b)** Linear fitting and curve regression for evaluation of dielectric constant.