

Figure 1 Current-voltage curves of samples grown from HfCl_4 with Nickel NPs (left panel) and without Nickel NPs (right panel)

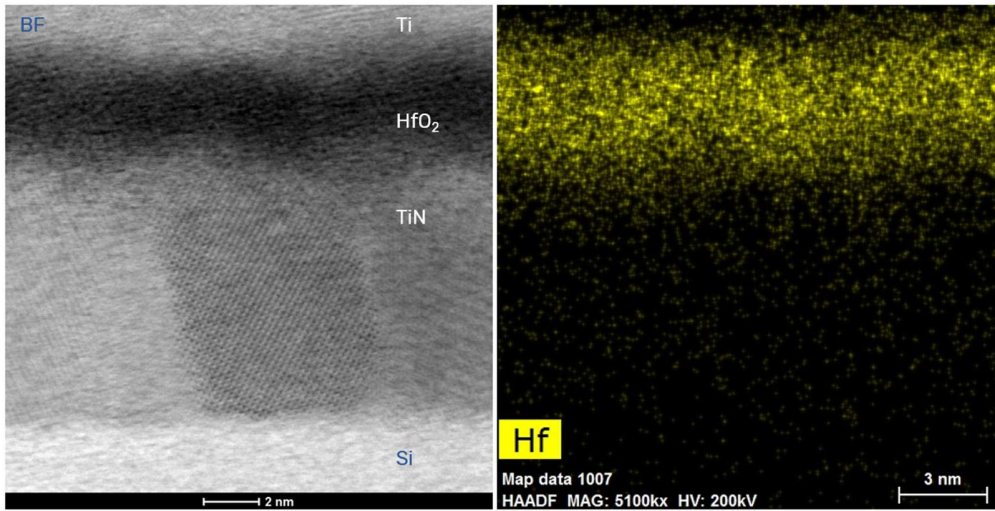


Figure 2 – Bright field STEM image of the sample structure showing nanocrystals within the TiN layer and an amorphous layer of HfO_2 (left panel) and corresponding EDS mapping for hafnium (right panel).

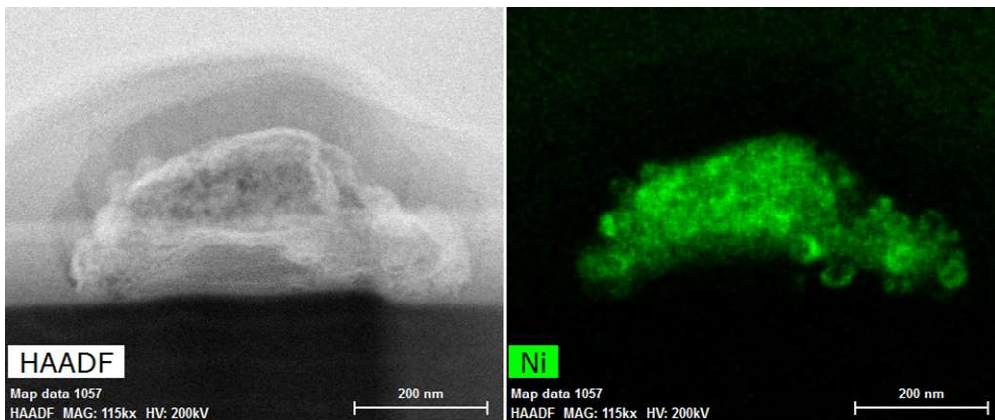


Figure 3 – High-angle annular dark field STEM image of a single nickel NP embedded in HfO_2 (left panel) and corresponding EDS mapping for Ni (right panel).