

Figure 1 Application of a radiofrequency (RF) substrate bias during the plasma step in the plasma-enhanced ALD process increases the ion energy. Top-view HAADF-STEM images show energetic ions promote a larger grain size. The zoomed image of the film prepared with a grounded substrate shows a less dense layer is grown.

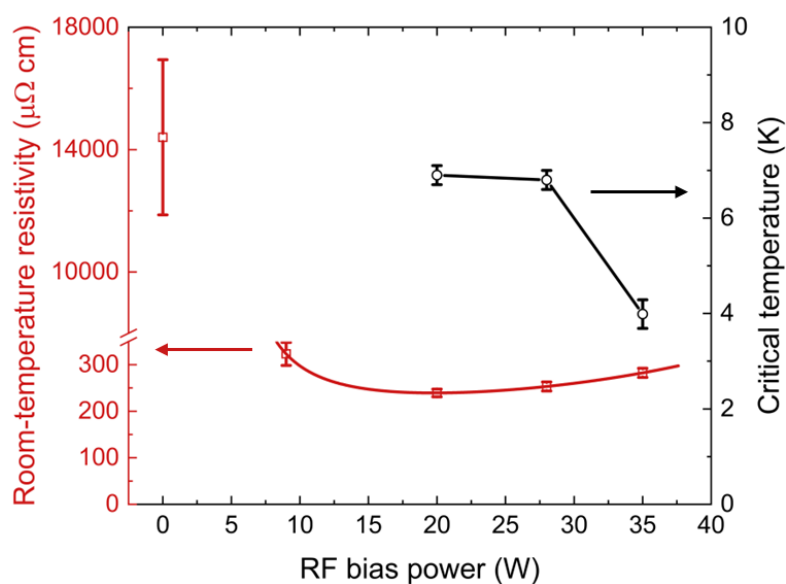


Figure 2 Improved room-temperature resistivity (red) and critical temperature of superconductivity (black) by ion-energy enhancement through application of a radiofrequency (RF) substrate bias. It is demonstrated that a further increase of ion energy leads to degradation of the resistivity and critical temperature. For 0 W and 9 W RF bias power no superconducting transition was recorded in the temperature range (down to 2.4 K) of the measurement.