Supporting Information

Gas Phase Synthesis of Iron Silicide Nanostructures using a Single-Source Precursor: Comparing Direct-Write Processing and Thermal Conversion

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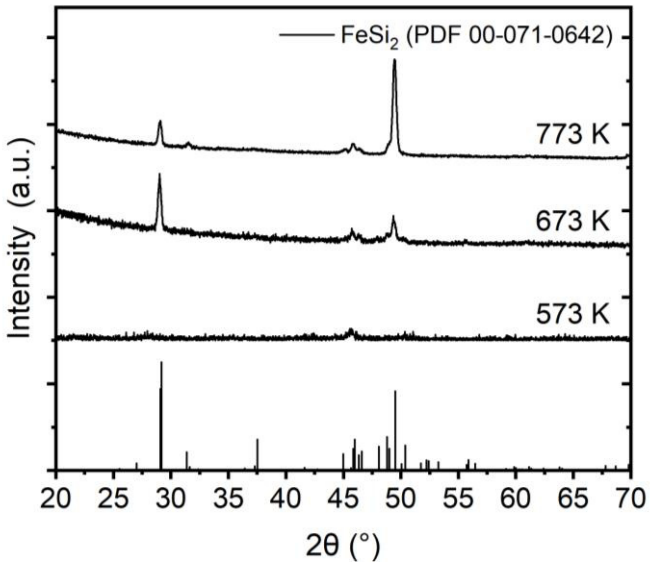

Figure S1: XRD pattern recorded at room temperature for films grown at substrate temperatures ranging from 573 to 773 K showing preferred orientation.

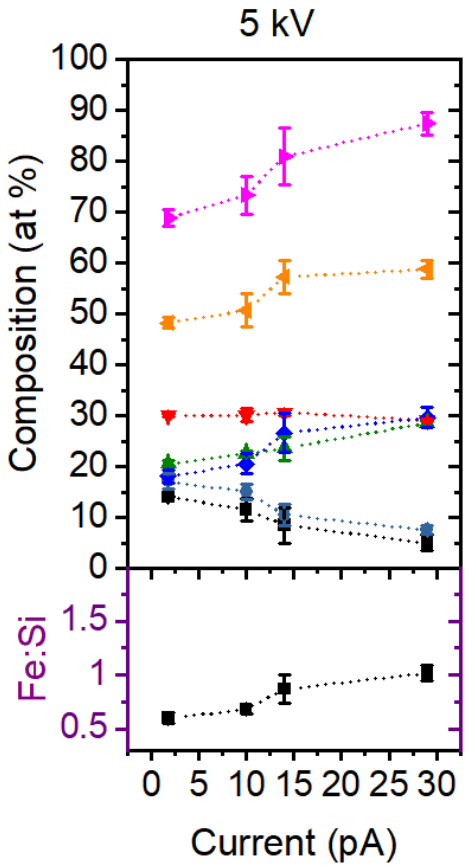

Figure S2: The elemental composition of the FIBID material determined by EDX in relation to the beam current used (1-30 pA) with an acceleration voltage of 5 kV. The lower part of the graphic shows the Fe:Si ratio observed in the deposits. Further FIBID parameters include the deposition area of 1.4 µm × 1.4 µm; a 30 nm pitch in x- and y-direction, and a dwell-time 0.2 µs. The deposition is carried out on Cu (200 nm) coated sapphire substrates.

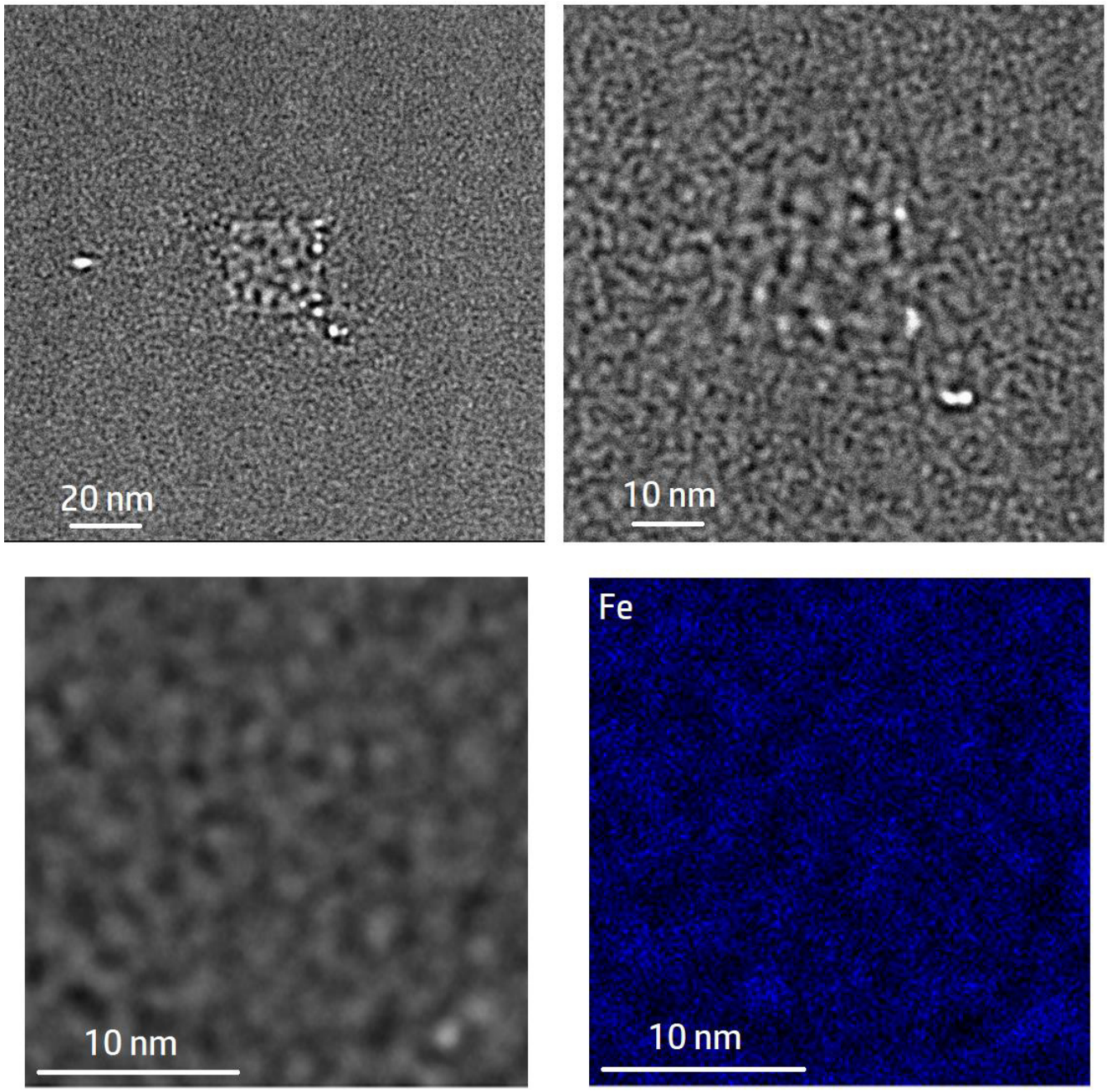

Figure S 3: HAADF images from FEBID lamellae showing the regions of the STEM mapping with altered microstructure due to electron beam exposure. Similarly, the HAADF taken before the mapping does not reflect the coarsened features observed in the Fe map.

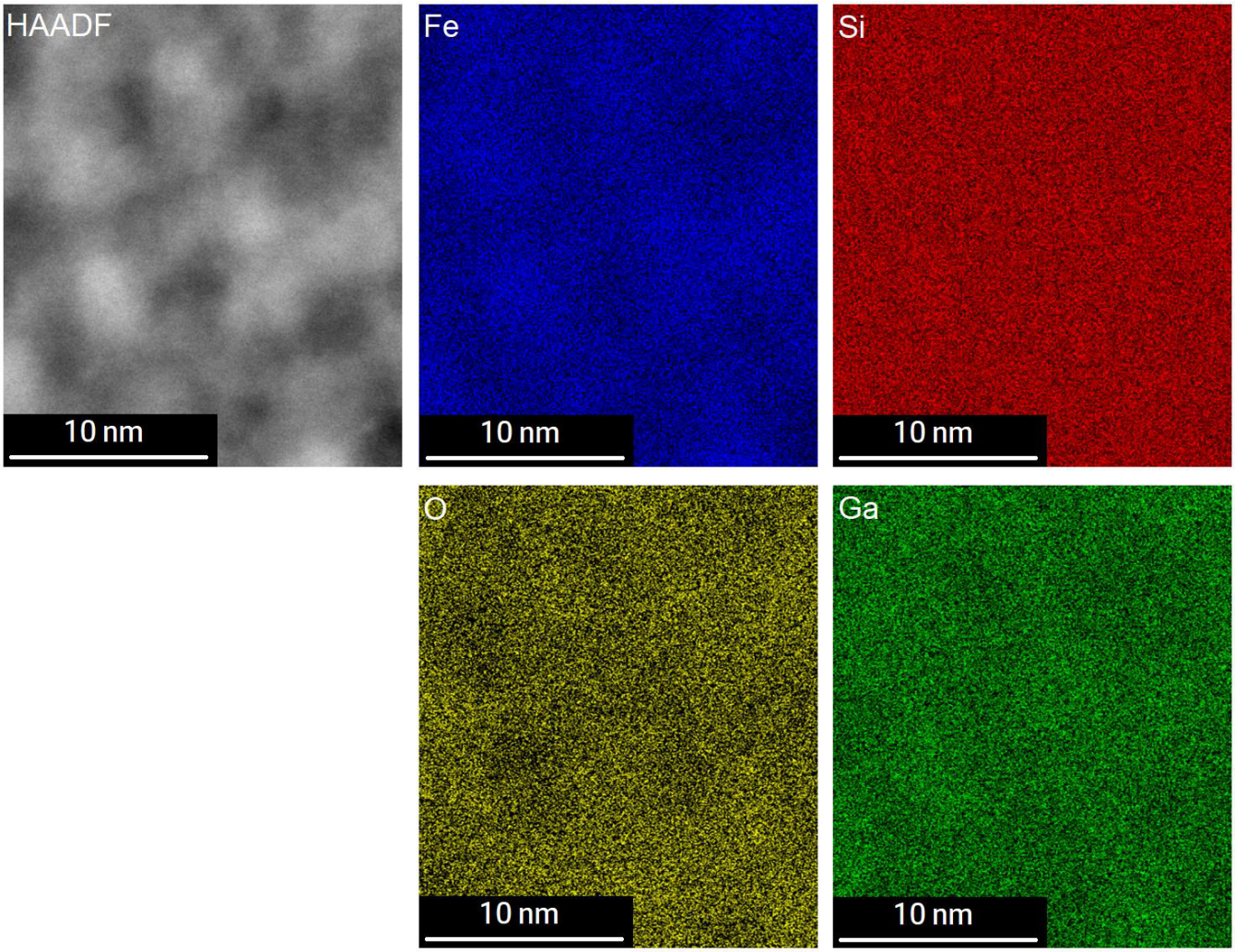

Figure S4: HAADF image and corresponding Fe_K, Si_K, O_K, and Ga_K map illustrating that the darker regions in the HAADF indeed reflect a lower concentration in Fe and slightly higher in oxygen.