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Supporting information for article:

Real-Time Tracking of the Self-Assembled Growth of 3D Ge Quantum Dot Lattice in Alumina Matrix

Ashin Shaji, Maja Micetic, Yuriy Halahovets, Peter Nadazdy, Igor Matko, Matej Jergel, Eva Majkova and Peter Siffalovic

S1. Characterization of the multilayer stack parameters from X-ray reflectivity

The X-ray reflectivity (XRR) can be effectively implemented to determine the multilayer period, interface roughness and layer thicknesses. The experimental and fitted XRR curves for the Ge/Al_2O_3 multilayers deposited at 300°C and room temperature (RT) are shown in Fig. S1(a) and Fig. S1(b), respectively. The fitted bilayer thicknesses for 300°C and RT are 3.87 ± 0.02nm and 3.98 ± 0.04 nm, respectively. The larger interface roughness of the sample deposited at 300°C (0.42 nm for Ge and 0.22 nm for Al_2O_3) when compared to that deposited at RT (0.32 nm for Ge and 0.18 nm for Al_2O_3) suggests the formation of Ge QDs as confirmed by GISAXS.

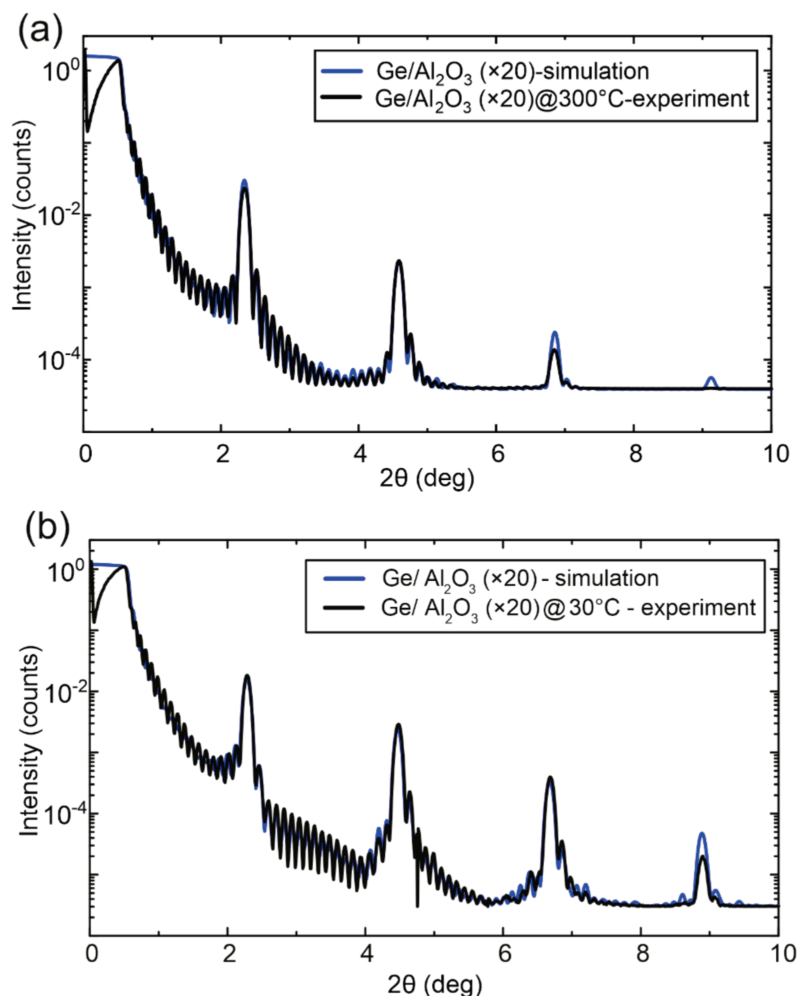

Figure S1 XRR curves of the samples deposited (a) at 300°C and (b) at RT and their fits.