

Supplementary information

SAW Resonators and Filters Based on $\text{Sc}_{0.43}\text{Al}_{0.57}\text{N}$ on Single Crystal and Polycrystalline Diamond

SEM:

SEM inspection of the grounded reflector and IDT of the SAW filter.

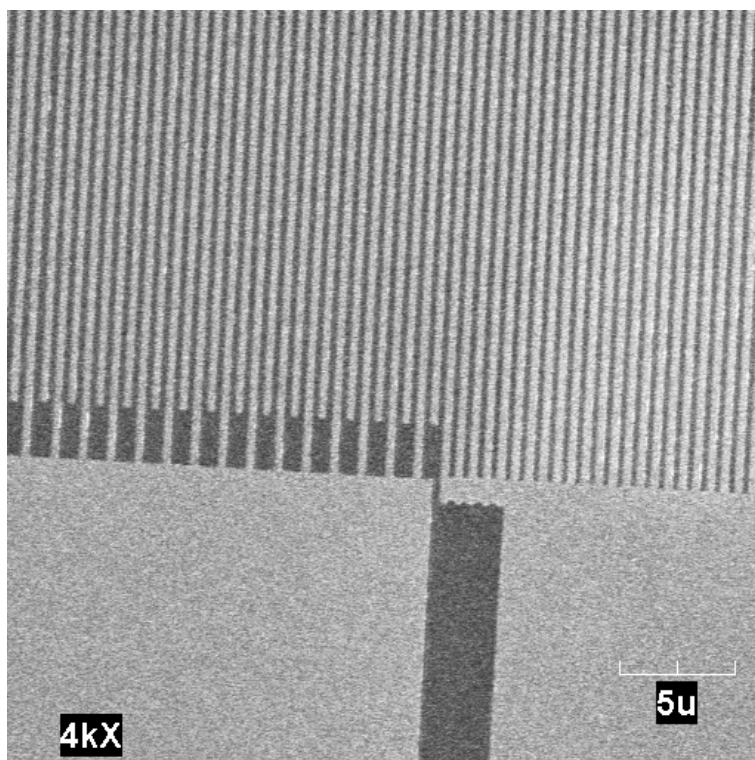


Figure S1. SEM inspection of the SAW filter IDT and ground reflector

RBS:

Rutherford Backscattering Spectrometry (RBS) (Figure S2) was carried out with a 3080 keV He^{++} beam. Measuring at this energy enhances the oxygen signal from the ScAlN layer because of the resonance in the He-O cross section at 3.05 MeV. The angle between the ion beam and the sample surface normal was 7° and the angle between the surface normal and the detector was 3° , so that the backscattering angle was 170° . Concentrations and thicknesses are obtained by comparing the experimental data with simulations done with the SIMNRA program (<https://mam.home.ipp.mpg.de/index.html>).

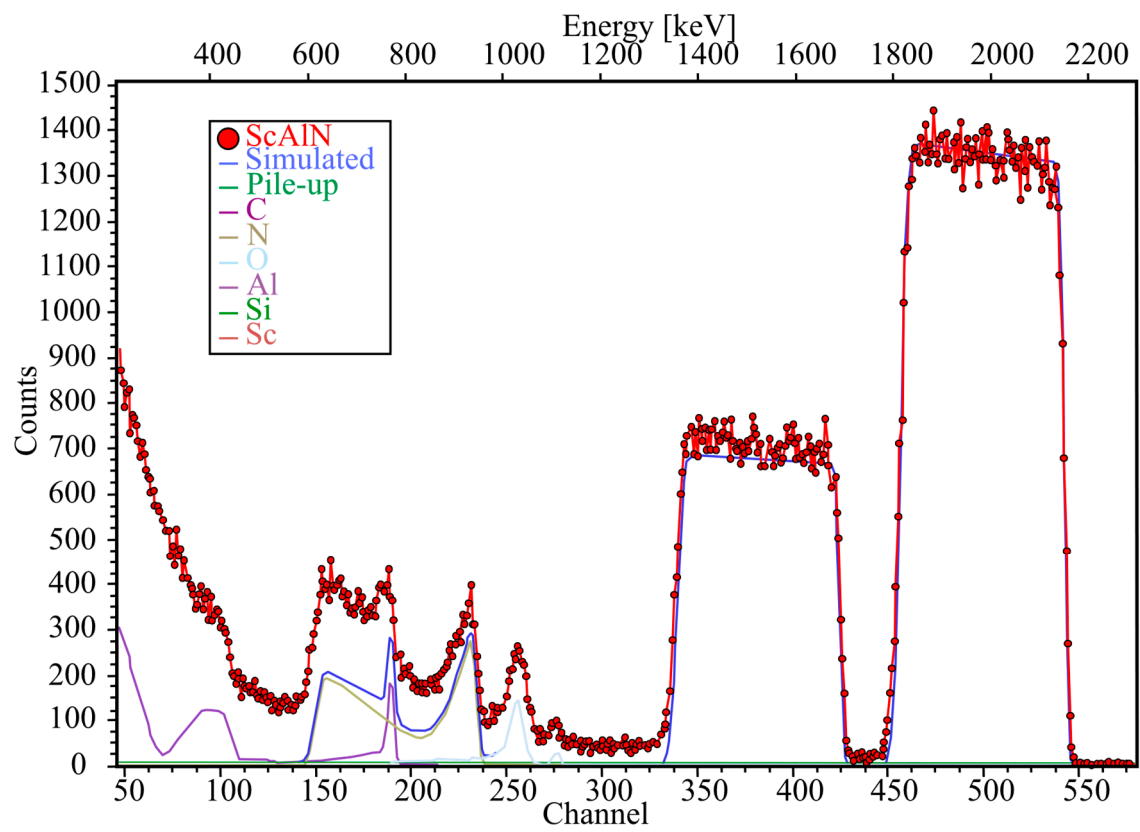


Figure S2. RBS spectra of a $Sc_{0.43}Al_{0.57}N$ thin film