

## Supporting Information

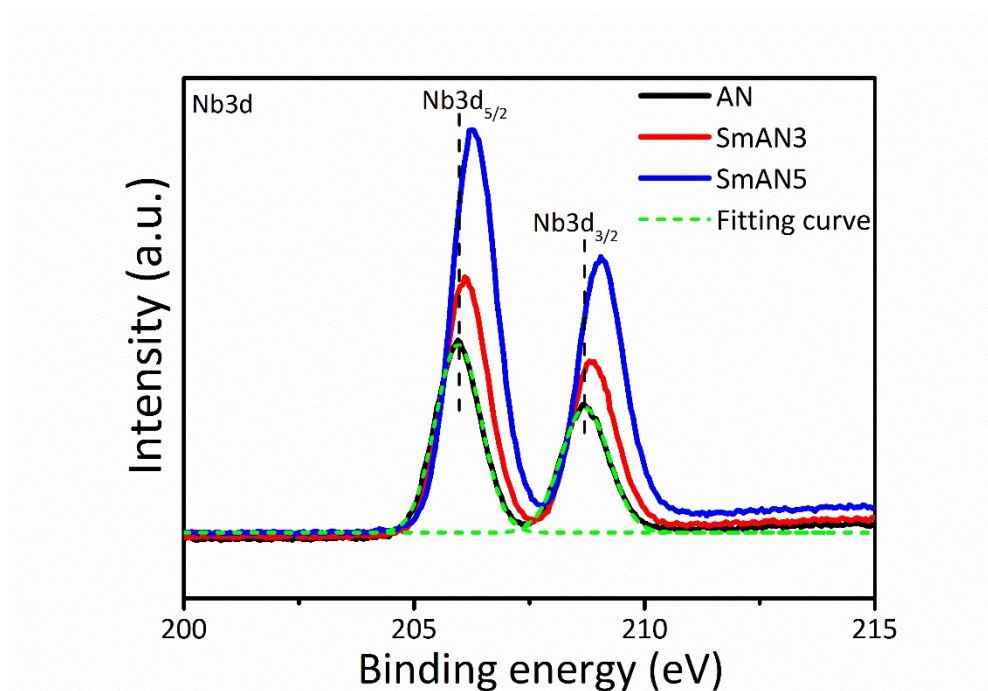


Figure S1. XPS spectra of Nb3d core level for the SmAN<sub>x</sub> ceramics with selected compositions.

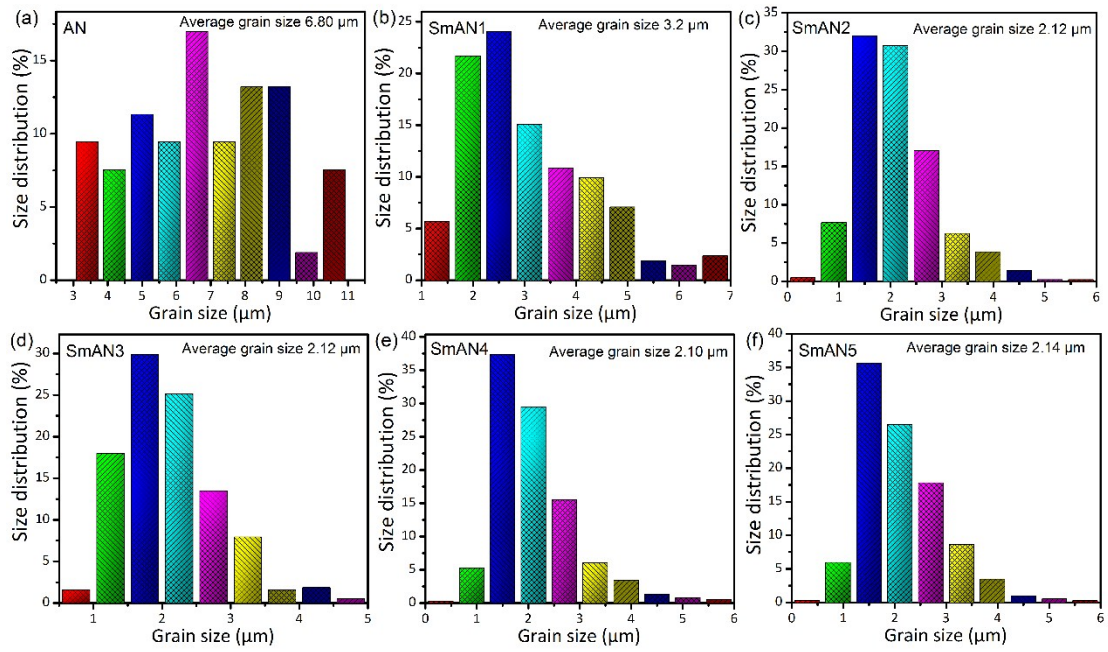


Figure S2. the grain size distributions of SmANx ceramics. (a)AN, (b) SmAN1, (c) SmAN2, (d) SmAN3, (e) SmAN4, and (f) SmAN6 ceramics.

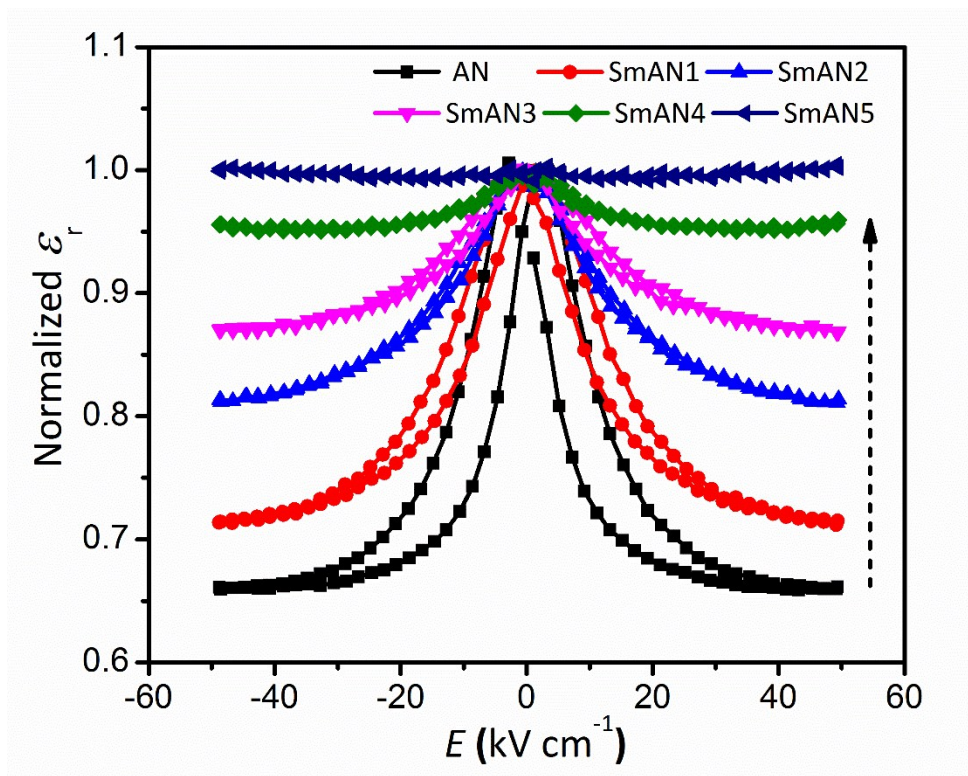


Figure S3. Normalized dielectric permittivity  $\epsilon_r$  as a function of electric field for the as-prepared SmANx ceramics.