



STRUCTURAL AND OPTICAL PROPERTIES OF RF-SPUTTERED NiO THIN FILMS FOR OPTOELECTRONIC APPLICATIONS

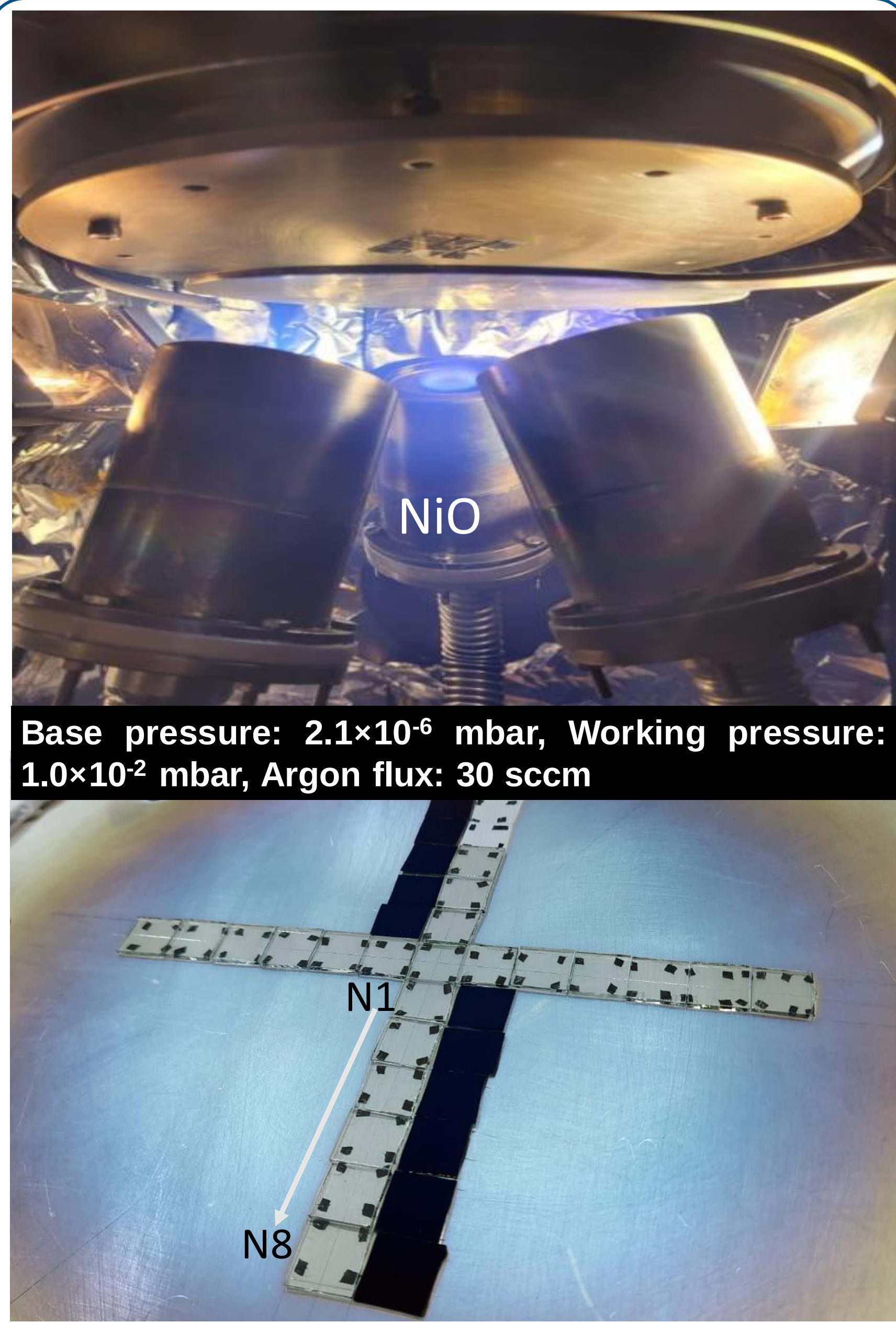
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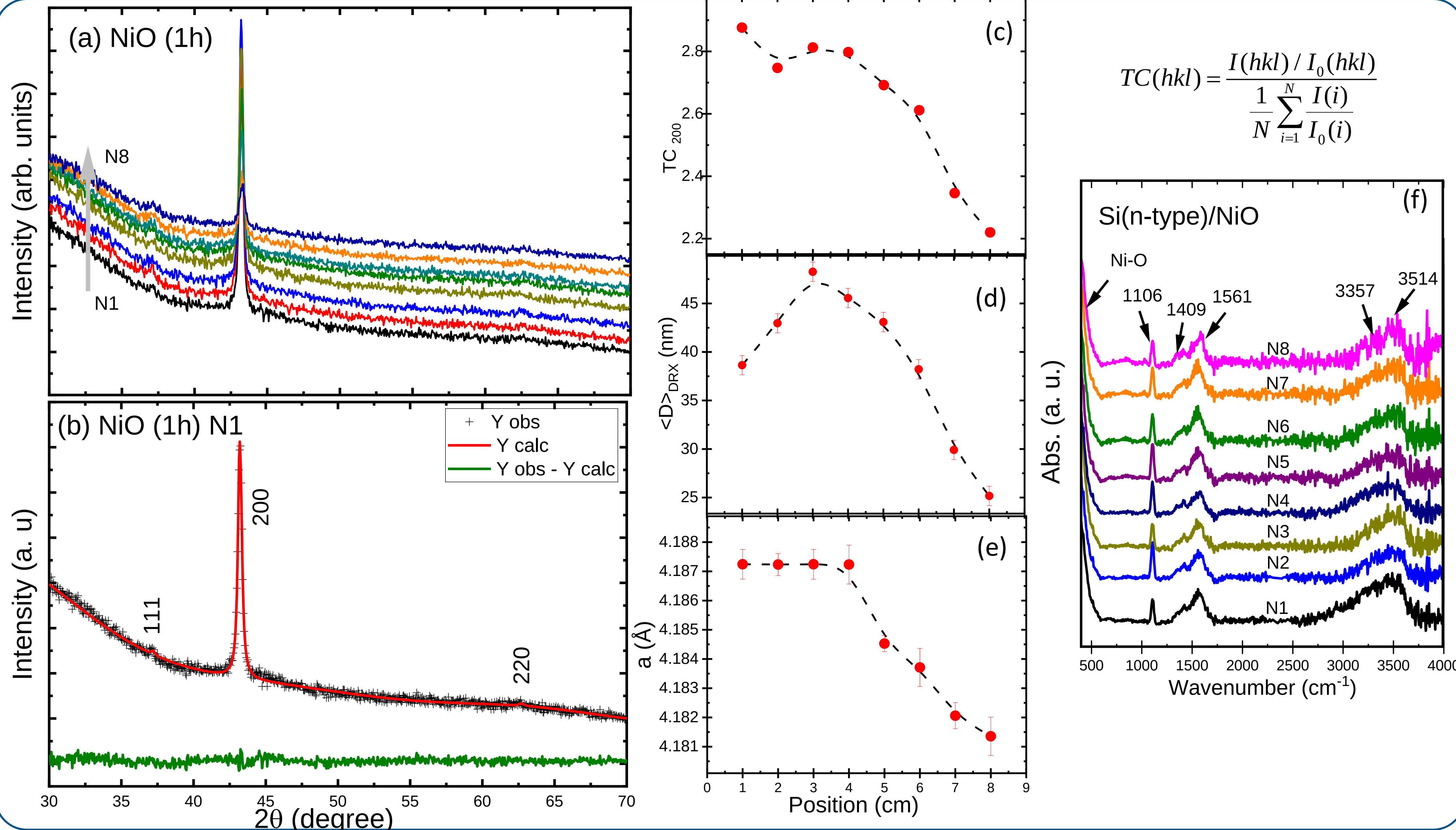
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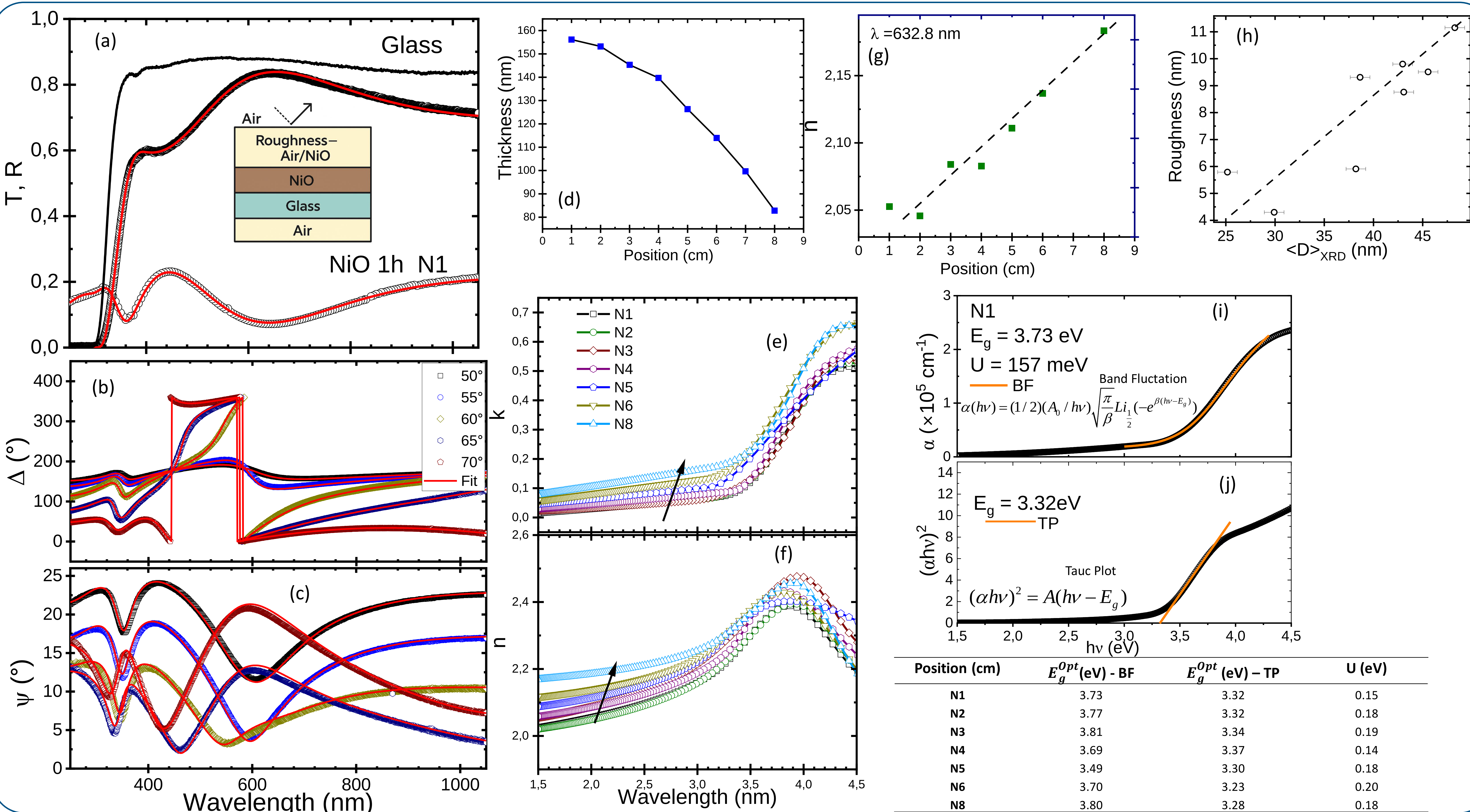
MATERIAL PREPARATION



STRUCTURAL ANALYSIS



OPTICAL ANALYSIS



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CONCLUSIONS:

RF-sputtered NiO thin films exhibit a polycrystalline structure with a strong (200) preferred orientation, enhanced by the position of the films. Structural parameters vary across the substrate due to deposition-rate effects, influencing crystallite size and microstructural development. Spectroscopic ellipsometry reveals wide-bandgap optical behavior ($E_g \approx 3.6\text{--}3.9$ eV), with optical properties governed by film thickness and microstructure, supporting their use in optoelectronic applications.