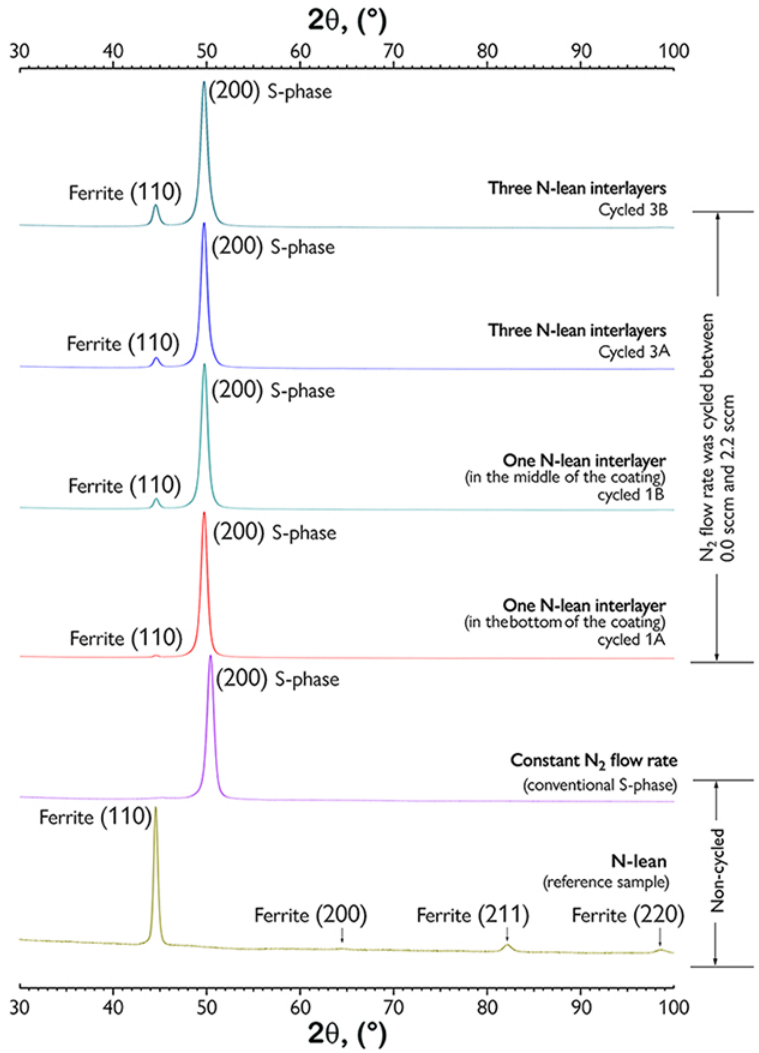
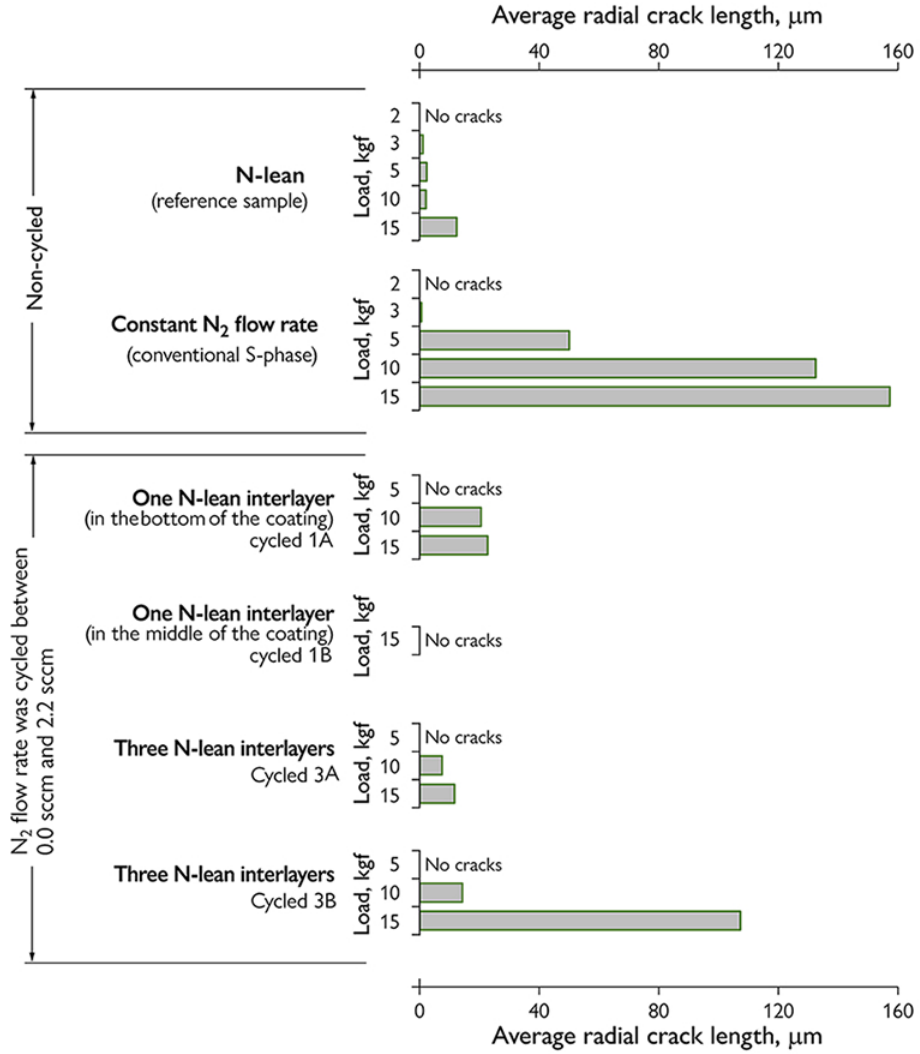


(a)



(b)

Effects of stacking configuration for S-phase coatings obtained cycling the N_2 gas flow rate on (a) coating X-ray diffraction (XRD) patterns and (b) radial crack length on top of samples hardness tested with a Vickers indenter. For XRD the Bragg-Brentano configuration was used, with $Cu_{K\alpha}$ radiation. Coatings were deposited onto glass substrates at 573 K substrate heating, with fixed 1.2 sccm Ar gas flow. Conventional S-phase coatings were obtained under fixed 2.2 sccm N_2 flow rate. Ferrite refers to iron body-centered cubic structure. S-phase refers to nitrogen alloyed iron face-centered cubic structure.