

Fig.1 Engineering stress–strain curves of the first 5% strain obtained from cyclic loading–unloading tensile tests at room temperature for the heat-treated Ti-20Zr-12Nb-2Sn specimens: (a) FT-560-02; (b) ST-560-30; (c) ST-700-30.

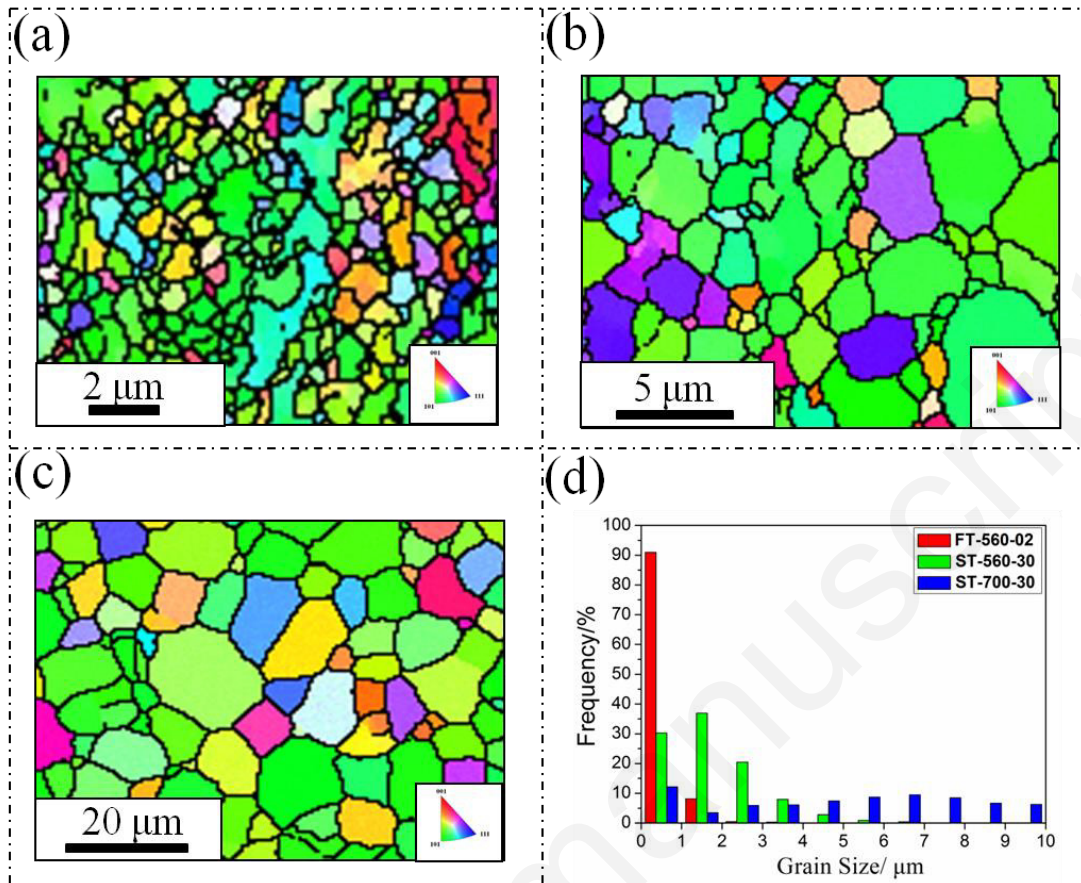


Fig.2 Inverse pole figure (IPF) maps along RD (Rolling Direction) for the heat-treated Ti-20Zr-12Nb-2Sn specimens: (a) FT-560-02; (b) ST-560-30; (c) ST-700-30; (d) the grain size ($\leq 10 \mu\text{m}$) distribution of the three heat treatment conditions.

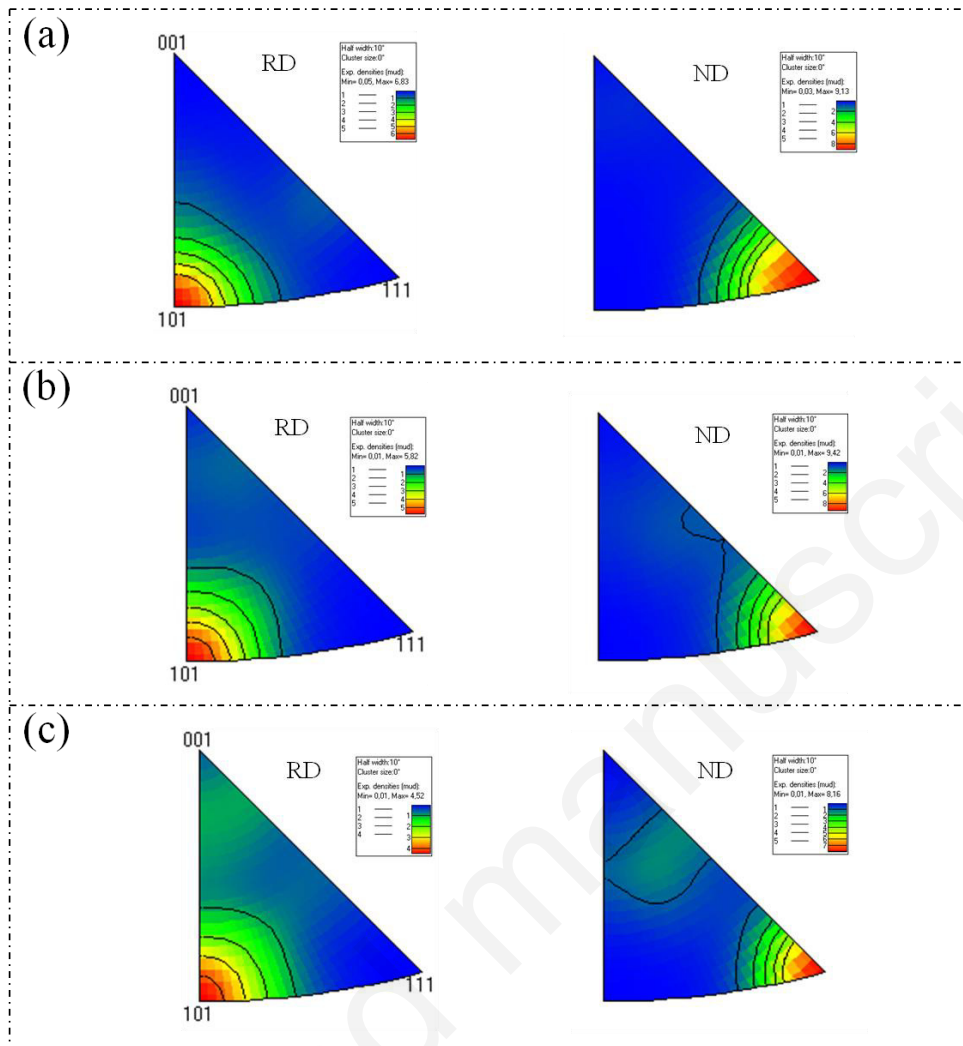


Fig.3 Inverse pole figures of the heat-treated Ti-20Zr-12Nb-2Sn specimens: (a) FT-560-02; (b) ST-560-30; (c) ST-700-30.

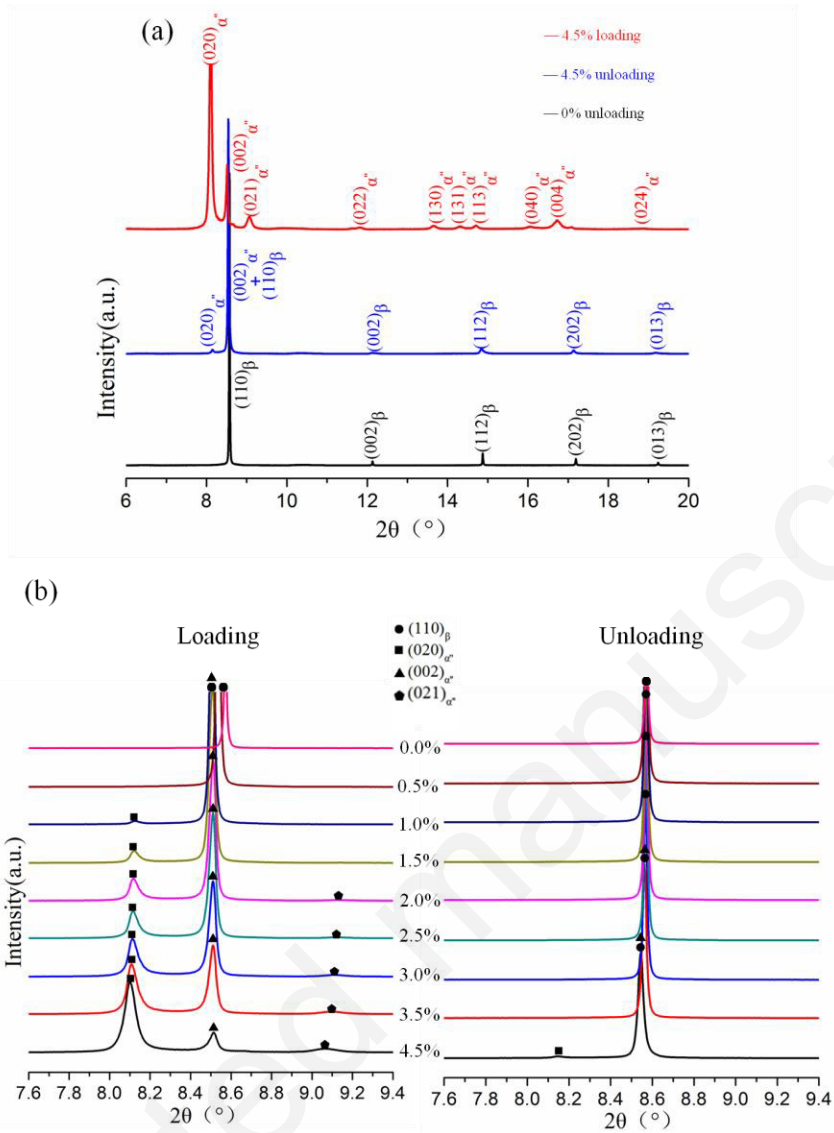


Fig.4 In situ SXR D patterns of the FT-560-02 alloy: (a) before deformation (black) and after 4.5% of strain during loading (red) and unloading (blue) conditions; (b) the zoomed patterns around $2\theta=7.6^{\circ}\sim 9.4^{\circ}$ during cyclic tensile tests on loading (left) and after unloading (right).