

Analisis rietveld lapisan tipis PIZT dengan substrat Pt

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Abstrak

Analisis Rielveld dengan program EXPGUI-GSAS dapat digunakan untuk meneliti kekristalan material. Pada penelitian dilakukan penghalusan parameter-parameier struktur liga sampel film tipis PIZT diatas subslrat Pi (200)/Si(VSi(tOO) dengan variasi doping indium, didapat indikator keberhasilan R-pola (Rp) pada selang (5,77-10,36)%, R-pola dengan pemberat (wRp) pada selang anira (8,59-15,35)% dan Goodness of fit (GoF) pada selang antara 1,036-5,462. Indikator yang didapal secara fisik dapat ditandai dengan miripnya kurva kalkulasi dengan kurva eksperimen. Semua sampel PIZT substrat Pt menunjukkan sistem kristal kubik dengan grup ruang Fm3m. Selain itu didapat nilai parameier kisi hasil penghalusan yang mendekati nilai pada international Centre for Diffraction Data (ICDD).

<hr><i>We have use Rietveld analysis on EXPGUI-GSAS plalform to examine the crystallinity of PIZT on Pt Substrate. In this experiment, we have used 3 samples of PIZT thin film in the platinum substrate with variation on the percentage of indium doping. The value of efficacy indicator for 3 specimens included R-Pattern (Rp) between (5,77-10,36)%, weighted of R-Pattern (wRp) between (8,59-15.35)% and Goodness of Fit (GoF) between 1,036-5,462. The value of efficacy indicator marked physically as alike between the calculated curve and experiment curve. Most of the sample of PIZT thin films in platinum substrate show that the crystal structure are cubic with space group Fm3m and lallice parameter near the value on the Powder Diffraction Data-International Center for Diffraction Data.</i>