Method of manufacturing a ferroelectric layer transferred onto a substrate and of polarization with improved homogeneity

Abstract

A method of manufacturing a structure comprising a ferroelectric layer of negative polarization (P1), comprising the steps of: providing a wafer of ferroelectric material ($Ferro_{sub}$) exhibiting a polarization (-P1) oriented towards a face (Top); forming an embrittlement plane (Frgl) in the wafer; assembling the wafer to a support assembly (Sprt.Set); detaching a part of the wafer so as to define a ferroelectric layer ($Ferro_{lay}$) assembled to the support assembly (Sprt.Set) so as to obtain a structure (Struct), the ferroelectric layer exhibiting a negative polarization (P1); carrying out an additional full-field hydrogen implantation step, configured so as to correct or prevent the occurrence of polarization reversal in the volume of the ferroelectric layer and/or at its interface with the support assembly (Sprt.Ens); and applying at least a first heat treatment to the structure (Strct).

Figure to be published with the abstract: Fig. 2