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(21) International Application Number: PCT/US99/22178 (22) International Filing Date: 24 September 1999 (24.09.99) (30) Priority Data: 09/160,778 24 September 1998 (24.09.98) US (71) Applicants: TELCORDIA TECHNOLOGIES, INC. [US/US]; 445 South Street 1G-112R, Morristown, NJ 07960-6438 (US). UNIVERSITY OF MARYLAND [US/US]; 4312 Knox Road, College Park, MD 20742 (US). (72) Inventor: RAMESH, Ramamoorthy; 12526 Stratford Garden Drive, Silver Springs, MD 20904 (US). (74) Agents: HEY, David, A. et al.; Telcordia Technologies, Inc., International Coordination, 445 South Street 1G-112R, Morristown, NJ 07960-6438 (US).		(81) Designated States: AU, CA, CN, ID, IN, JP, KR, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: FERROELECTRIC THIN FILMS OF REDUCED TETRAGONALITY (57) Abstract A ferroelectric material, especially as incorporated into a crystallographically oriented epitaxial ferroelectric cell, of $\text{Pb}_{1-x}\text{La}_x\text{Zr}_y\text{Ti}_{1-y}\text{O}_3$ or $\text{Pb}_{1-x}\text{Nb}_x\text{Zr}_y\text{Ti}_{1-y}\text{O}_3$ having a moderately high La or Nb content such that the unit cell is less tetragonal, that is, more nearly cubic, so as to reduce stress effects. A most preferred value of the c/a constant is about 1.01. Exemplary compositional ranges for x are 6 to 20 % for La and 3 to 15 % for Nb, when y is 20 %. The reduced polarizabilities voltages are consistent with integrated ferroelectric memories operating at 3.0V and lower.		