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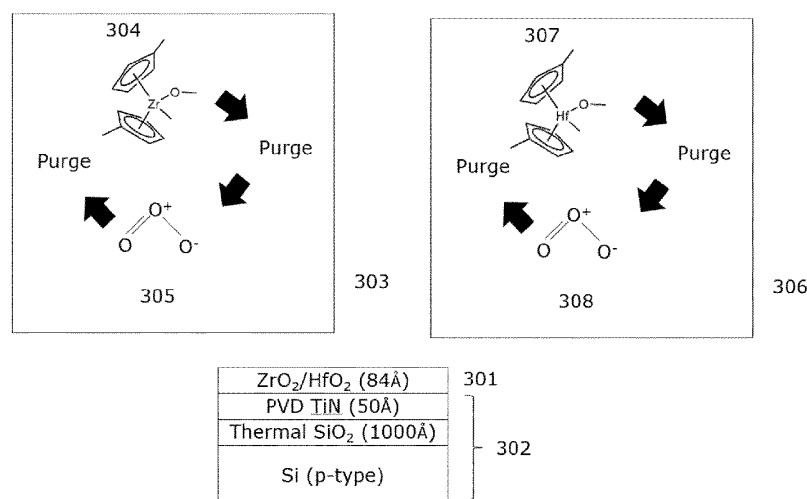


FIG. 3

(57) Abstract: The disclosed and claimed subject matter relates to crystalline ferroelectric materials that include a mixture of hafnium oxide and zirconium oxide having a substantial (i.e., approximately 40% or more) or majority portion of the material in a ferroelectric phase as deposited (i.e., without the need for further processing, such as a subsequent capping or annealing) and methods for preparing and depositing these materials.

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