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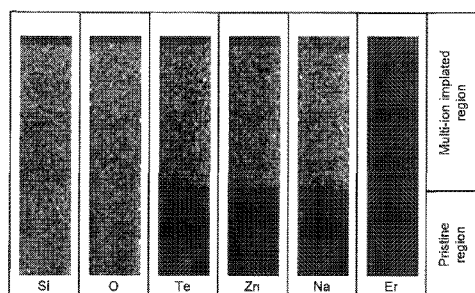
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## (54) Title: NOVEL MATERIAL



(57) Abstract: The present invention relates to a substrate comprising an ion-implanted layer, for example a cation, wherein the ion implanted layer has a substantially uniform distribution of the implanted ions at a significantly greater depth than previously possible, to a well-defined and sharp boundary within the substrate. The invention further comprises said substrate wherein the substrate is a silicon based substrate, such as glass. The invention also comprises the use of said material as a waveguide and the use of said material in measurement devices.

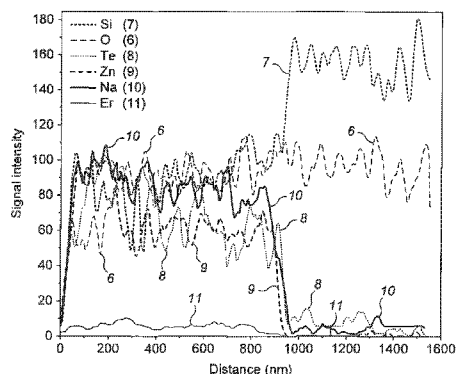


FIG. 3



**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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