

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 June 2025 (26.06.2025)



(10) International Publication Number
WO 2025/132667 A1

- (51) **International Patent Classification:**
H10N 30/073 (2023.01) *H10N 30/086* (2023.01)
- (21) **International Application Number:**
PCT/EP2024/087236
- (22) **International Filing Date:**
18 December 2024 (18.12.2024)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
FR2314530 19 December 2023 (19.12.2023) FR
- (71) **Applicant:** **SOITEC** [FR/FR]; Parc Technologique des Fontaines, Chemin des Franques, 38190 Bernin (FR).
- (72) **Inventors:** **CHIBKO, Alexandre**; Parc Technologique des Fontaines, Chemin des Franques, 38190 Bernin (FR). **BOSSER, Gurvan**; Parc Technologique des Fontaines, Chemin des Franques, 38190 Bernin (FR).
- (74) **Agent:** **IP TRUST**; 8 rue La Fayette, 75009 PARIS (FR).
- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

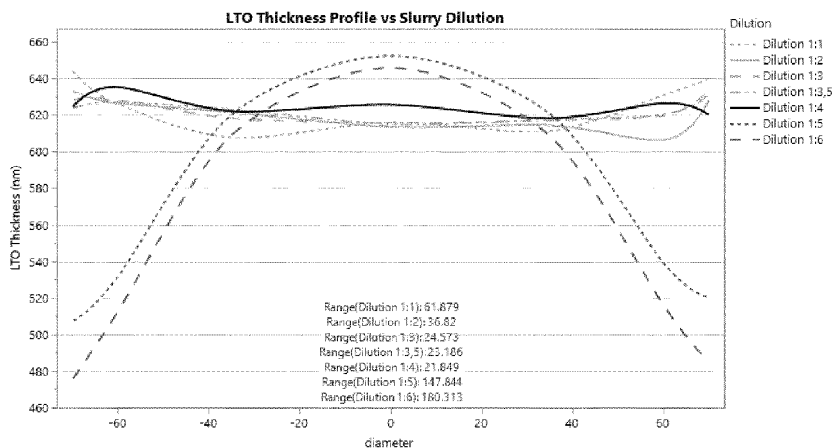
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:
— with international search report (Art. 21(3))

(54) **Title:** MANUFACTURING OF A POI STRUCTURE WITH A HIGHLY UNIFORM PIEZOELECTRIC LAYER

[Fig. 2]



(57) **Abstract:** The present invention relates to a method of manufacturing a Piezoelectric on Insulator, POI, structure, comprising providing a donor substrate comprising a piezoelectric substrate, wherein the piezoelectric substrate comprises or consists of one of lithium tantalate and lithium niobate, transferring a piezoelectric layer from the piezoelectric substrate to a target substrate, and polishing the piezoelectric layer transferred to the target substrate with a chemical mechanical polishing, CMP, slurry, wherein the CMP slurry consists of an aqueous suspension of amorphous silicon with a weight percent of the amorphous silicon in the range of 4 to 18.

WO 2025/132667 A1