

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009867 A3

(51) International Patent Classification⁷: **C23C 16/18**,
16/06

(21) International Application Number:
PCT/IT2003/000445

(22) International Filing Date: 18 July 2003 (18.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2002-244354 22 July 2002 (22.07.2002) JP

(71) Applicants (for all designated States except US): **SAES
GETTERS S.p.A.** [IT/IT]; Viale Italia, 77, I-20020
Lainate MI (IT). **TOSHIMA MFG. CO. LTD.** [JP/JP];
1414 Shimonomoto, Higashimatsuyama-Shi, Saitama
355-0036 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOUJI, Yoda**

[JP/JP]; Sesami-Haitsu 105, 2-13-22, Yakyu-chou, Hi-
gashi-matsuyama-shi, Saitama (JP). **YUZO, Tasaki**
[JP/JP]; 3-7-16-705, Owada-chou, Hachioji-shi, Tokyo
(JP).

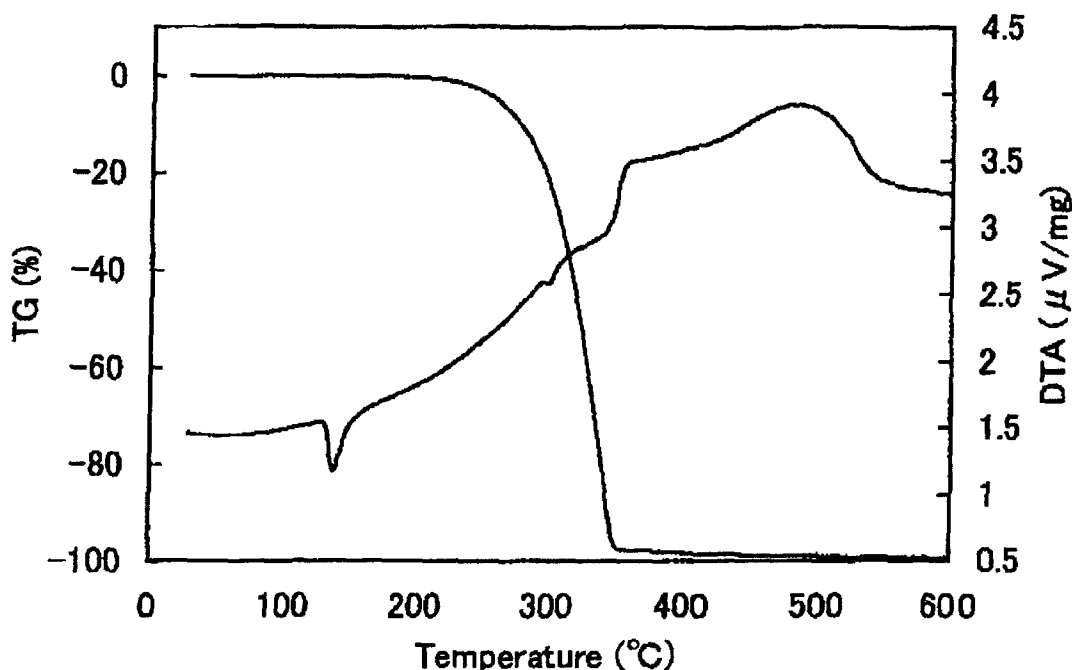
(74) Agents: **PIZZOLI, Antonio** et al.; Società Italiana
Brevetti S.p.A., Via Carducci, 8, I-20123 Milano (IT).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ZIRCONIUM COMPLEX USED FOR THE CVD METHOD AND PREPARATION METHOD OF A THIN FILM
USING THEREOF



(57) Abstract: In the preparation of a PZT thin film by the liquid source CVD method, using zirconium tetrakis(isobutryl)pyl-
oylemethanate) as a zirconium precursor enables to obtain a constant composition ratio of films within a wide range of the substrate
temperature, and negates the need for the thermal treatment alter the film preparation. Accordingly, the present invention provides
a PZT thin film having a constant quality at a low cost.

WO 2004/009867 A3



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

18 March 2004