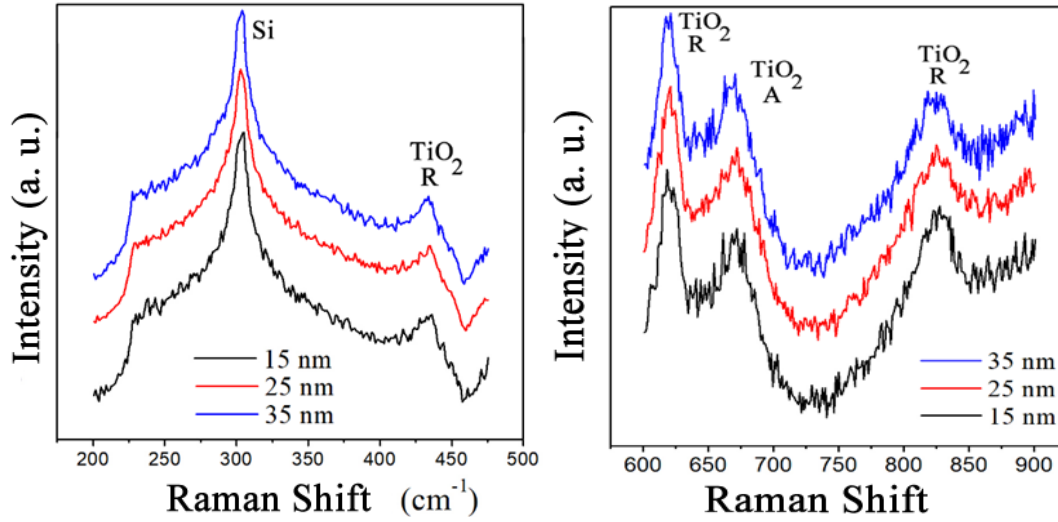

Figure 1: Raman spectroscopy of 15, 25 and 35 nm TiO2 films deposited by ALD.

Table 1: Parameters calculated and extracted from the CxV and IxV curves of MOS capacitors with TiO_2 deposited by ALD with a thickness of 15 nm. Flat band voltage (V_{FB}), hysteresis (ΔV_{FB}), dielectric constant (k), Maximum capacitance (Cmax), Minimum capacitance (Cmin), oxide equivalent thickness - EOT (nm), Leakage current density in accumulation and in inversion.

TiO_2 - 15 nm									
Upper electrode dimension	V_{FB}	ΔV_{FB}	k	$C_{máx}$	$C_{mín}$	EOT	Qo/q	Leakage current at +2V (accumulation)	Leakage current at -2V (inversion)
µm	Volts	Volts		Faraday	Faraday	nm	($/cm^{-2}$)	j(A/cm^2)	j(A/cm^2)
800	0,23	0,0	22,36	$3,6E^{-9}$	$0,11E^{-11}$	52,7	$-8,44E^{+11}$	$2,21E^{-2}$	$4,79E^{-04}$
400	0,25	0,0	16,26	$1,1E^{-9}$	$5,32E^{-11}$	65,1	$-1,08E^{+15}$	$2,27E^{-2}$	$1,29E^{-03}$
200	0,27	0,0	14,1	$3,2E^{-10}$	$3,81E^{-11}$	75,0	$-1,35E^{+12}$	$2,25E^{-2}$	$3,92E^{-03}$
100	0,28	0,0	11,43	$1,1E^{-10}$	$2,50E^{-11}$	103,2	$-1,93E^{+15}$	$2,35E^{-2}$	$1,07E^{-02}$

Table 1: Parameters calculated and extracted from the CxV and IxV curves of MOS capacitors with TiO_2 deposited by ALD with a thickness of 25 nm. Flat band voltage (V_{FB}), hysteresis (ΔV_{FB}), dielectric constant (k), Maximum capacitance (Cmax), Minimum capacitance (Cmin), oxide equivalent thickness - EOT (nm), Leakage current density in accumulation and in inversion.

TiO_2 - 25 nm									
Upper electrode dimension	V_{FB}	ΔV_{FB}	k	$C_{máx}$	$C_{mín}$	EOT	Qo/q	Leakage current at +2V (accumulation)	Leakage current at -2V (inversion)
µm	Volts	Volts		Faraday	Faraday	nm	($/cm^{-2}$)	j(A/cm^2)	j(A/cm^2)
800	0,24	0,01	24,08	$4,8E^{-9}$	$8,0E^{-11}$	175,53	$-1,171E^{12}$	$9,26E^{-2}$	$5,9E^{-4}$
400	0,25	0,01	27,09	$1,35E^{-9}$	$3,8E^{-11}$	197,48	$-5,48E^{11}$	$4,88E^{-2}$	$6,4E^{-4}$
200	0,26	0,01	29,70	$3,72E^{-10}$	$2,51^{E-11}$	216,5	$-1,56E^{12}$	$14,61E^{-2}$	$5,3E^{-03}$
100	0,29	0	36,28	$1,1E^{-10}$	$1,6^{E-11}$	264,47	$-2,048E^{12}$	$17,92E^{-2}$	$14,5E^{-03}$

Table 1: Parameters calculated and extracted from the CxV and IxV curves of MOS capacitors with TiO_2 deposited by ALD with a thickness of 35 nm. Flat band voltage (V_{FB}), hysteresis (ΔV_{FB}), dielectric constant (k), Maximum capacitance (Cmax), Minimum capacitance (Cmin), oxide equivalent thickness - EOT (nm), Leakage current density in accumulation and in inversion.

TiO_2 - 35 nm									
Upper electrode dimension	V_{FB}	ΔV_{FB}	k	$C_{máx}$	$C_{mín}$	EOT	Qo/q	Leakage current at +2V (accumulation)	Leakage current at -2V (inversion)
µm	Volts	Volts		Faraday	Faraday	nm	($/cm^{-2}$)	j(A/cm^2)	j(A/cm^2)
800	0,11	0	46,21	7,6E^{-9}	7,5E^{-11}	405,58	-8,20E^{11}	6,354 E^{-2}	6,95E^{-5}
400	0,13	0	48,32	2,0E^{-9}	2,8E^{-11}	424,10	-1,01E^{11}	6,968 E^{-2}	1,07E^{-4}
200	0,14	0	50,83	5,2E^{-10}	1,6E^{-11}	446,13	-1,15E^{12}	8,06 E^{-2}	2,35E^{-4}
100	0,16	0	56,44	1,4E^{-10}	1,6E^{-11}	495,36	-1,46E^{12}	10,505 E^{-2}	8,46E^{-4}