

	H <sub>2</sub> S dosage (s)	C (atomic%)	N (atomic%)	Zn (atomic%)	O (atomic%)	S (atomic%)
ZnO	-	0.88	-	53.18	45.95	-
ZnOS	0.1	0.65	-	52.95	37.52	8.88
	0.3	0.59	-	53.11	32.64	13.64
	0.5	0.99	-	53.20	30.28	15.53
	1	1.12	-	52.97	31.51	14.38
ZnS	0.1	-	-	55.35	-	44.65

Table 1. Elemental composition of ZnO, ZnS & Zn(O,S) 11:1 with different H<sub>2</sub>S dosage by XPS

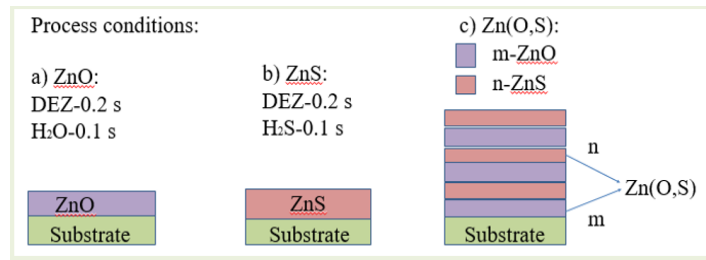


Fig 1. Schematic diagram of Zn(O,S) deposition by ALD process

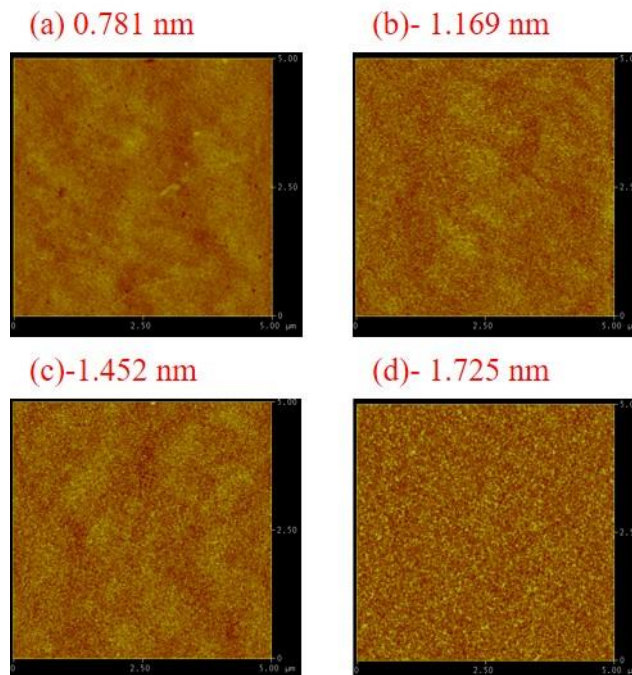


Fig 2. AFM images of Zn(O,S) 11:1 with different H<sub>2</sub>S dosage (a) 0.1 s (b) 0.3 s (c) 0.5 s (d) 1 s