Work report 140222: Co-sputtered ZnO-SnO_2

Rob Treharne

May 27, 2014

1 Overview

Samples for Binghampton. Co-sputtered ZTO films on conductive substrates.

2 Samples

Table 1: Sample deposition parameters. Both films are deposited on 1mm thick aluminaborosilicate glass (ABS) substrates coated with a 250 nm thick film of ITO (10 Ω/square).

ID	140516_2	140519_2
Material	ZnO:SnO_2	ZnO:SnO_2
RF power (W)	250:80	70:80
Ar pressure (mTorr)	5	5
dep. time (min)	30	30
T_{dep} (°C)	18	18

3 Film profiles

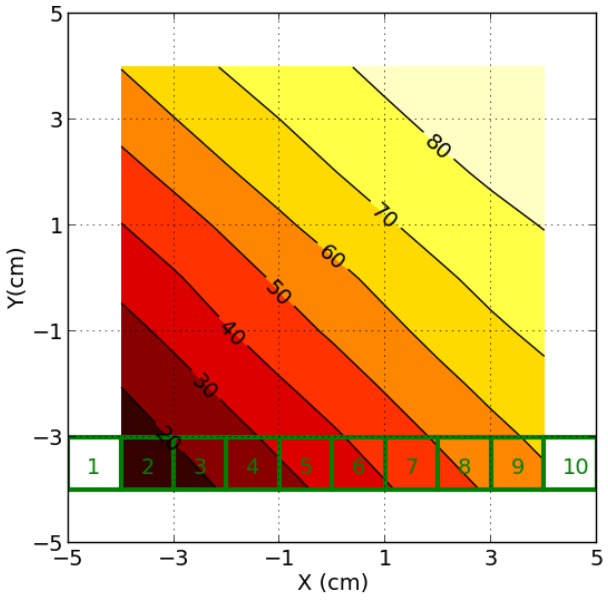

Figure 1: 140516_2_ZnO_SnO_2: % wt. SnO_2 profile of co-sputtered film. Green sample series cut from sample.

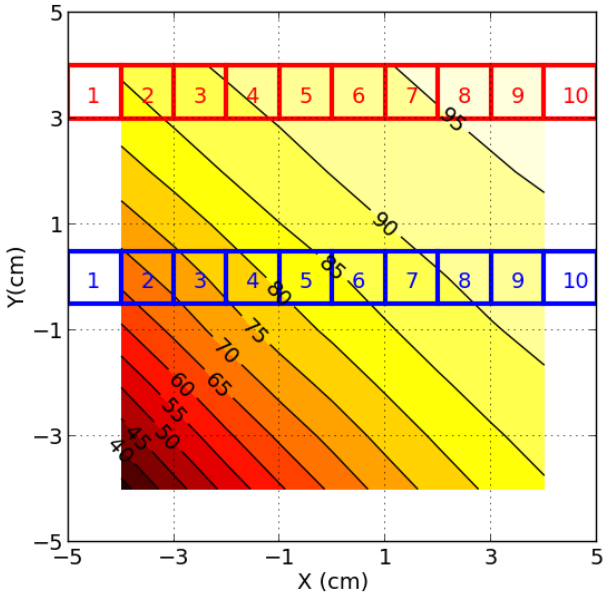

Figure 2: 140519_2_ZnO_SnO_2: % wt. SnO_2 profile of co-sputtered film. Red and blue sample series cut from sample.

Table 2: Aporoximate % wt. SnO_2 content for green, red and blue sample series cut from ZTO samples.

Piece	Green	Red	Blue
1	9.8	81.0	60.0
2	15.3	84.1	66.2
3	21.0	87.0	71.7
4	26.8	89.3	76.6
5	32.6	91.3	80.9
6	38.6	93.0	84.4
7	44.7	94.3	87.4
8	50.9	95.3	89.6
9	57.2	95.9	91.2
10	63.6	96.0	92.2