



Fig.1 high-resolution XPS spectra of C 1s, Sn 3d, O 1s

Table1 Percentage of oxygen deficiency concentration

Materials	O I	O II	OIII
M0	26.95%	33.34%	39.71%
M1	31.13%	35.54%	33.33%
M2	28.46%	36.37%	35.17%
M3	26.85%	43.02%	30.13%

By observing Fig. 1, it can be seen that the peak of Sn 3d of M1-M3 material is shifted relative to the peak of Sn 3d of M0 material, and the same phenomenon occurs in the peak of O 1s, proving that Ag_3PO_4 is doped into SnO_2 , and by observing Table 1, it can be seen that the area ratio of O II is gradually increasing, Oxygen vacancies increase significantly due to the increase in doping. The introduction of oxygen vacancies in gas-sensitive materials facilitates the adsorption of the target gas on the surface of the material, improves the electrical conductivity of the material.

Table2 Composition list

Materials	Composition
M0	SnO_2
M1	1% Ag_3PO_4 -doped SnO_2
M2	2.5% Ag_3PO_4 -doped SnO_2
M3	5% Ag_3PO_4 -doped SnO_2

