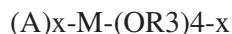


Organometallic compound and method

ABSTRACT

A class of organometallic compounds is provided. The compounds correspond in structure to Formula 1:



wherein:

A is selected from the group consisting of $-NR_1R_2$, $-N(R_4)(CH_2)_nN(R_5R_6)$, $-N=C(NR_4R_5)(NR_6R_7)$, $OCOR_1$, halo and Y;

R_1 and R_2 are independently selected from the group consisting of H and a cyclic or acyclic alkyl group having from 1 to 8 carbon atoms, with the proviso that at least one of R_1 and R_2 must be other than H;

R_4 , R_5 , R_6 and R_7 are independently selected from the group consisting of H and an acyclic alkyl group having from 1 to 4 carbon atoms;

Y is selected from the group consisting of a 3- to 13-membered heterocyclic radical containing at least one nitrogen atom;

R_3 is a cyclic or acyclic alkyl group having from 1 to 6 carbon atoms;

M is selected from the group consisting of Si, Ge, Sn, Ti, Zr and Hf;

x is an integer from 1 to 3; and

n is an integer from 1 to 4.

Compounds of the invention may be useful as precursors in chemical phase deposition processes such as atomic layer deposition (ALD), chemical vapour deposition (CVD), plasma assisted ALD and plasma assisted CVD.

Methods of low temperature vapour phase deposition of metal oxide films, such as SiO_2 films, are also provided.

(Figure 1)