

Novel β -ketoiminato complexes of Zirconium: Synthesis, characterization and evaluation for solution based processing of ZrO_2 thin films

Supporting Information

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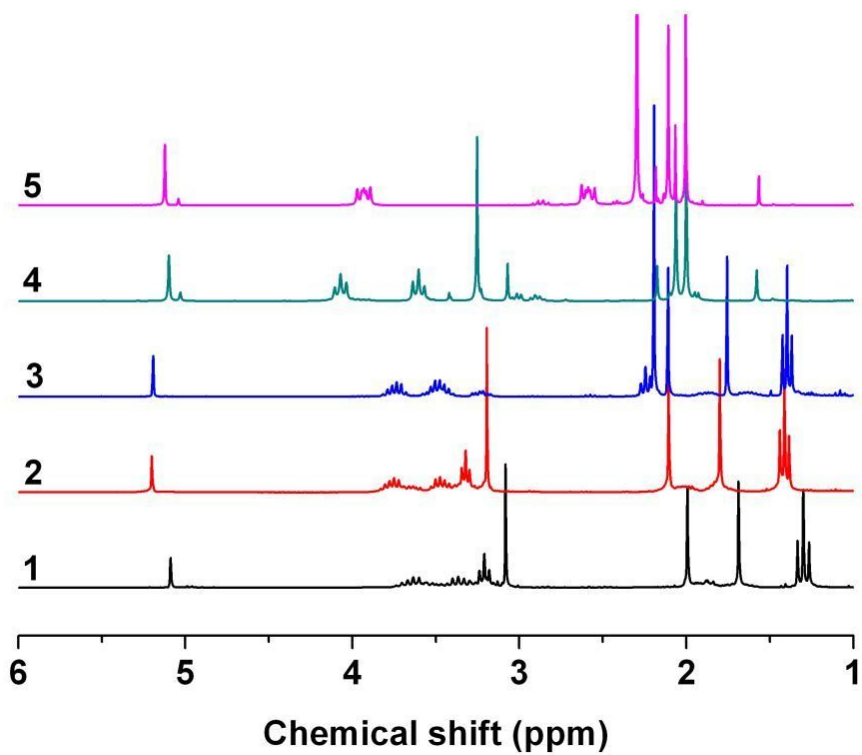


Figure 1: ^1H NMR plot of complexes 1-5 in benzene- d_6 .

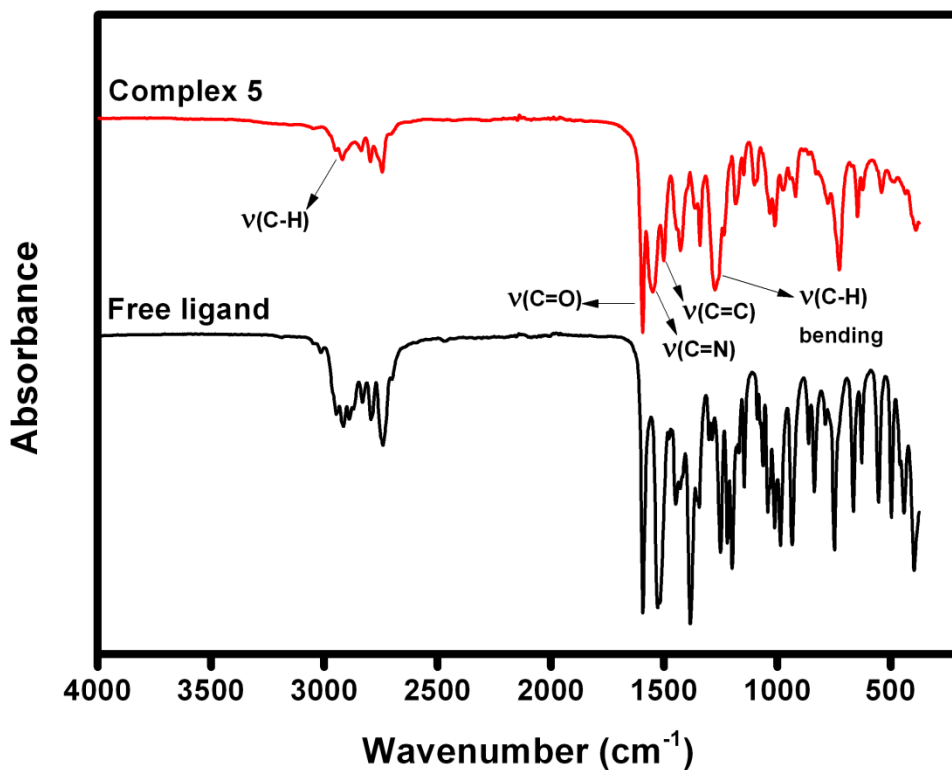


Figure 2: IR spectrum of **5** overlaid with the free ligand (Hdeap).

Table 1: EI-MS fragmentation pattern of complexes **4** and **5**.

4		5	
Fragments	Mass [m/z]	Fragments	Mass [m/z]
M-3L-Me	230.3	M-L	579.2
M-3L-2Me	216.3	M-L-L ₁	538.5
M-3L-L ₁	187.2	M-2L	427.2
M-3L-L ₁ -Me	172.2	M-2L-NMe ₂	384.1
M-3L-L ₁ -2Me	157.2	M-2L-L ₁	370.1
		M-3L	259.0
		M-3L-L ₂	186.9
		M-3L-L ₂ -Me	175.2

For **4**, L= ketoiminate; L₁=-CH₂NMe₂; L₂=-CH₂CH₂NMe₂. For **5**, L= ketoiminate; L₁= -CH₂CH₂OMe. M= molecular ion.

Table 2: Film composition determined from RBS and NRA for ZrO₂ film on Si(100) at different annealing temperatures.

Annealing temperature [°C]	Zr/O (RBS)	C [%] (NRA)	N [%] (NRA)
400	0.4	19	0.4
600	0.4	11	0.6