

Fig.1: The Temperature Window at Which the Ni(acac)<sub>2</sub> is Selectively Deposited on MoO<sub>3</sub>/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> but not on  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>



FTIR Spectra of MoO<sub>3</sub>/γ-Al<sub>2</sub>O<sub>3</sub> and the

Ni  $(acac)_2(g)$  + OH -MoO<sub>3</sub>/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> (S)  $\rightarrow$  (Acac)- Ni-O- MoO<sub>3</sub>/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> (S) + Hacac (g)  $\uparrow$ 



Fig.2: Ni ALD on MoO<sub>3</sub>/γ-Al<sub>2</sub>O<sub>3</sub> and Proposed Mechanism for Formation of (Acac)- Ni-O- MoO<sub>3</sub>/γ-Al<sub>2</sub>O<sub>3</sub> Species



Fig.3: S-Removal Efficiency of DBT at 300 °C