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(54) Title: NEW GROUP V AND VI TRANSITION METAL PRECURSORS FOR THIN FILM DEPOSITION

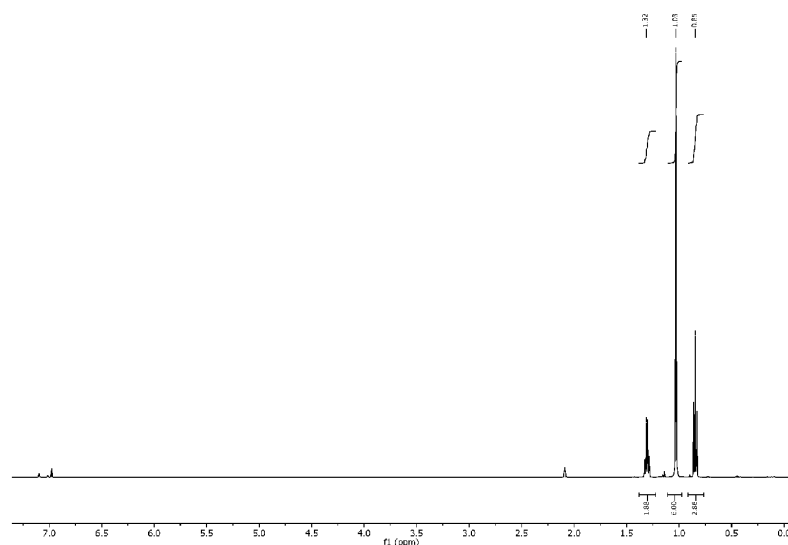


Figure 1

(57) Abstract: Described herein are Group V and VI compounds used as precursors for depositing Group V and VI-containing films. Ligands with alkyl, amide, imide, amidinate groups and/or cyclopentadienyl (Cp) ligands are used to form Group V and VI complexes used as precursors. Examples of Group V and VI precursor compounds include, but are not limited to, Cp amide imide alkyl vanadium compounds, Cp amide imide alkylamide vanadium compounds, Cp amide imide alkoxide vanadium compounds, Cp amide imide amidinate vanadium compounds, and alkylimide vanadium trichloride compounds. The Group V and VI precursors are used for deposition on substrate surfaces with superior film properties such as uniformity, continuity, and low resistance. Examples of substrate surfaces for deposition of metal-containing films include, but are not limited to metals, metal oxides, and metal nitrides.

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