

(54) Title of the invention : Monosaccharide derived ligands and their metal complexes for the hydration and oxidation of 1-arylethenes, and a process for the manufacture thereof

(51) International classification :B01J31/22, B01J31/28, B01J31/32, B01J31/34, B01J31/36, B01J31/38, C07F15/00, C07F17/00 (86) International Application No :NA Filing Date :NA (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)Name of Applicant : 1)INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD Address of Applicant :Dhanbad - 826004, Jharkhand, India Dhanbad - ----- Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)SOMNATH YADAV Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 2)SACHCHIDA NAND PANDEY Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 3)ARUNAVA SENGUPTA Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 4)RAJIB BERA Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 5)ARUNDHATI CHAKRABORTY Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 6)SOHEL ALI Address of Applicant :Department of Chemistry & Chemical Biology, Indian Institute of Technology (Indian School of Mines) Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad -----
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(57) Abstract :

The present invention relates to compound having the formula I and II or their stereoisomers, wherein: - one of X is necessarily O and two other X are necessarily CHOR5 and one of X is independently selected from, CH2, CHCH3, CHOR5, CHCOR6; - R1, R2, R3, R4 is selected from H, halo, C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl, C1-6 haloalkyl, C1-6 haloaloxo, C6-10 aryl, C3-10 cycloalkyl, C5-11 heteroaryl, C4-10 heterocycloalkyl, CN, NO2, CO2R7, OR7, SR7, Si(R7)3; - R5 is independently selected from H, C1-5 alkyl, C2-6 alkenyl, C2-6 alkynyl, C1-6 haloalkyl, C1-6 azidoalkyl, C1-6 alkoxyalkyl, C6-10 aryl, C3-10 cycloalkyl, C5-11 heteroaryl, C4-10 heterocycloalkyl, each of which (except H) may be substituted with 1, 2, 3, or 4 independently selected R7 substituents; - R6 is independently selected from C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl, C1-6 haloalkyl, C1-6 haloaloxo, C6-10 aryl, C3-10 cycloalkyl, C5-11 heteroaryl, C4-10 heterocycloalkyl, each of which may be substituted with 1, 2, 3, or 4 independently selected R7 substituents; - R7 is selected from H, halo, C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl, C1-6 haloalkyl, C1-6 haloaloxo, C6-10 aryl, C3-10 cycloalkyl, C5-11 heteroaryl, C4-10 heterocycloalkyl, CN, NO2, CO2R6, OR6, SR6, Si(R6)3; - M is a metal or a metal ion independently selected from one of the 3d, 4d or 5d transition metal series. The present invention further relates to a process for the preparation of compound and formula I and II and the use thereof.

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