

Supplementary Information

Metal-Ligand Cooperative Approaches in Homogeneous Catalysis Using Transition Metal Complex Catalysts of Redox Noninnocent Ligands

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Abbreviation List

abt = aromatic monoanionic *o*-aminothiophenolate.

PI = iminopyridine.

PDI = bis(imino)pyridine.

THF = tetrahydrofuran.

Fc/Fc⁺ = Ferrocene/ Ferrocenium

Cp₂Fe = iron(II) bis(cyclopentadienide).

TON = Turn over number.

HAT = Hydrogen atom transfer.

GO = Galactose Oxidase

TOF = Turn over frequency.

BQ = benzoquinone.

SQ^{•-} = semiquinonate.

DFT = Density Functional Theory.

pcp = 2-(4-chlorophenylazo)pyridine.

bpy = 2,2'-bipyridine.

acac⁻ = acetylacetonate.

DTBCat²⁻ = 3,5-di-tert-butyl catecholate.

SET-WNA = Single electron transfer-water nucleophilic attack.

2c-3e = 2-centers-3 electrons.

SET = Single electron transfer

SCE = Saturated calomel electrode.

PCET = Proton-coupled electron transfer.

bdt = benzenedithiolate.

tdt = toluene-3,4-dithiol.

dcbdt = 3,6-dichloro-1,2-benzenedithiol.

tpy = 2,2':6',2''-terpyridine.

CPE = Controlled-potential electrolysis.

TBP = 2,6-di-^tBu-pyridine.

MCS = Multi-component stream.