

# Abbreviations

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Ac	acetate
acac	acetylacetonate
acacen	<i>NN'</i> -ethylenebis(acetylacetone iminate)
Ad	adamantyl
AIBN	azoisobutyronitrile
ampy	2-amino-6-methylpyridine
Ar	Aryl
Ar*	2,4,6-tri( <i>t</i> -butyl)phenyl
Ar' <sub>f</sub>	3,5-bis(trifluoromethyl)phenyl
arphos	1-(diphenylphosphino)-2-(diphenylarsino)ethane
ATP	adenosine triphosphate
Azb	azobenzene
9-BBN	9-borabicyclo[3.3.1]nonane
BHT	2,6-dibutyl-4-methylphenyl
Biim	biimidazole
BINAP	2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
bipy	2,2'-bipyridyl
Bis	bis(trimethylsilyl)methyl
bma	2,3-bis(diphenylphosphino)maleic anhydride
BNCT	boron neutron capture therapy
Bp	biphenyl
bpcd	4,5-bis(diphenylphosphino)-cyclopent-4-en-1,3-dione
bpk	benzophenone ketyl (diphenylketyl)
Bpz <sub>4</sub>	tetra(1-pyrazolyl)borate
Bu <sup>t</sup> bpy	4,4'-di- <i>tert</i> -butyl-2,2'-bipyridine
<i>t</i> -bupy	<i>t</i> -butylpyridine
Bz	benzyl
Bzac	benzoylacetate
cbd	cyclobutadiene
1,5,9-cdt	cyclododeca-1,5,9-triene
chd	cyclohexadiene
chpt	cycloheptatriene
CIDNP	Chemically Induced Dynamic Nuclear Polarisation
[Co]	cobalamin
(Co)	cobalozime [Co(dm <sub>g</sub> ) <sub>2</sub> derivative]
cod	cyclo-octa-1,5-diene
coe	cyclo-octene
cot	cyclo-octatriene
CP/MAS	Cross Polarization/Magnetic Angle Spinning
Cp	η <sup>5</sup> -cyclopentadienyl
Cp <sup>R</sup>	η <sup>5</sup> -alkylcyclopentadienyl

Cp*	$\eta^5$ -pentamethylcyclopentadienyl
Cp'	trimethylsilylcyclopentadienyl
Cp''	tetramethylethylcyclopentadienyl
Cv	cyclic voltammetry(ogram)
CVD	chemical vapour deposition
Cy	cyclohexyl
Cyclam	1,4,8,11-tetraazacyclotetradecane
Cym	<i>p</i> -cymene
Cytpp	PhP(CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> PCy <sub>2</sub> ) <sub>2</sub>
dab	1,4-diazabutadiene
dabco	1,4-diazabicyclo[2.2.2]octane
dba	dibenzylideneacetone
dbpe	1,2-bis(dibutylphosphino)ethane
DBU	1,8-diazabicyclo[5.4.0]undec-7-ene
DCA	9,10-dicyanoanthracene
depe	1,2-bis(diethylphosphino)ethane
depm	1,2-bis(diethylphosphino)methane
DFT	density functional theory
diars	<i>o</i> -phenylenebis(dimethyl)arsine
diarsop	{[(2,2-dimethyl-1,3-dioxolan-4,5-diyl)bis-(methylene)]bis[diphenylarsine]}
dien	diethylenetriamine
diop	{[(2,2-dimethyl-1,3-dioxolan-4,5-diyl)bis-(methylene)]bis-1-[diphenylphosphino]ethane}
DIPAMP	1,2-bis(phenyl- <i>o</i> -anisoylphosphino)ethane
diphos	1,2-bis(diphenylphosphino)ethane
Dipp	2,6-di-isopropylphenyl
dipyam	di-(2-pyridyl)amine
DMAD	dimethyl acetylenedicarboxylate
DMAP	2-dimethylaminopyridine
Dmbpy	dimethylbipyridine
DME	1,2-dimethoxyethane
DMF	<i>NN</i> -dimethylformamide
dmg	dimethylglyoximate
dmgH	monoanion of dimethylglyoxime
dmgH <sub>2</sub>	dimethylglyoxime
DMP	dimethylpiperazine
dmpe	1,2-bis(dimethylphosphino)ethane
dmpm	bis(dimethylphosphino)methane
dmpz	1,3-dimethylpyrazolyl
DMSO	dimethyl sulfoxide
dpae	1,2-bis(diphenylarsino)ethane
dpam	bis(diphenylarsino)methane
dppa	1,2-bis(diphenylphosphino)ethyne
dppb	1,4-bis(diphenylphosphino)butane
dppbz	1,2-bis(diphenylphosphino)benzene
dppe	1,2-bis(diphenylphosphino)ethane
dppf	1,1'-bis(diphenylphosphino)ferrocene
dppm	bis(diphenylphosphino)methane
dppp	1,3-bis(diphenylphosphino)propane

DSD	diamond-square-diamond
edt	ethane-1,2-dithiolate
EDTA	ethylenediaminetetraacetate
ee	enantiomeric excess
EELS	electron energy loss spectroscopy
EH MO	extended Hückel molecular orbital
ELF	electron localisation function
en	ethylene-1,2-diamine
ES MS	electrospray mass spectrometry
EXAFS	extended X-ray absorption fine structure
F <sub>6</sub> acac	hexafluoroacetylacetonate
Fc	ferrocenyl
Fe*	Fe(CO) <sub>2</sub> Cp*
Fp	Fe(CO) <sub>2</sub> Cp
Fp'	Fe(CO) <sub>2</sub> (η <sup>5</sup> -C <sub>5</sub> H <sub>4</sub> Me)
FTIR	Fourier Transform Infra-red
FVP	flash vacuum pyrolysis
glyme	ethyleneglycol dimethyl ether
GVB	generalized valence bond
HBpz3	tris(pyrazolyl)borate
HBpz*3	tris(3,5-dimethylpyrazolyl)borate
H <sub>4</sub> cyclen	tetraaza-1,4,7,10-cyclododecane
HEDTA	<i>N</i> -hydroxyethylethylenediaminetetraacetate
hfa	hexafluoroacetone
hfacac	hexafluoroacetylacetonato
hfb	hexafluorobutyne
HMPA	hexamethyl phosphoric triamide
HNCC	high nuclearity carbonyl cluster
HOMO	highest occupied molecular orbital
IGLO	individual gauge for localized orbitals
im	imidazole
Is*	2,4,6-tri-isopropylphenyl
ISEELS	inner shell electron energy loss spectroscopy
KTp	potassium hydrotris(1-pyrazolyl)borate
LDA	lithium diisopropylamide
LiDBB	lithium di- <i>t</i> -butylbiphenyl
LNCC	low nuclearity carbonyl cluster
MAO	methyl alumoxane
Me <sub>6</sub> [14]dieneN <sub>4</sub>	5,7,7,12,14,14-hexamethyl-1,4,8,11-tetra-azacyclotetra-deca-4,11-diene
Me <sub>6</sub> [14]N <sub>4</sub>	5,5,7,12,12,14-hexamethyl-1,4,8,11-tetra-azacyclotetra-decane
4,7-Me <sub>2</sub> phen	4,7-dimethyl-1,10-phenanthroline
3,4,7,8-Me <sub>4</sub> phen	3,4,7,8,-tetramethyl-1,10-phenanthroline
Mes	mesityl
Mes*	2,4,6-tributylphenyl
MeTHF	methyltetrahydrofuran
mcpba	metachloroperbenzoic acid
MLCT	Metal-Ligand Charge Transfer
MTO	methylrhenium trioxide
nap	1-naphthyl

nb	norbornene
nbđ	norbornadiene
NBS	<i>N</i> -bromosuccinimide
NCS	<i>N</i> -chlorosuccinimide
NCT	neutron capture theory
Neo	neopentyl
Np	1-naphthyl
np <sub>3</sub>	N(CH <sub>2</sub> CH <sub>2</sub> PPh <sub>2</sub> ) <sub>3</sub>
nta	nitritotriacetate
OEP	octaethylporphyrin
OTf	trifluoromethanesulfonate (triflate)
Pc	phthalocyanin
PES	photoelectron spectroscopy
PMDT	pentamethylenediethylenetetramine
pd	pentane-2,4-dionate
phen	1,10-phenanthroline
pic	pyridine-2-carboxylic acid
Pin	(+)-pinanyl
pmedta	pentamethyldiethylenetriamine
pp <sub>3</sub>	P(CH <sub>2</sub> CH <sub>2</sub> PPh <sub>2</sub> ) <sub>3</sub>
[PPN] <sup>+</sup>	[(Ph <sub>3</sub> P) <sub>2</sub> N] <sup>+</sup>
py	pyridine
pydz	pyridazine
pz	pyrazolyl
R-PROPHOS	(R)-(+)-1,2-bis(diphenylphosphino)propane
R,R-SKEWPHOS	(2R,4R)-bis(diphenylphosphino)pentane
RDF	radial distribution function
ROMP	ring opening metathesis polymerisation
sal	salicylaldehyde
salen	<i>NN'</i> -bis(salicylaldehyde)ethylenediamine
saloph	<i>NN</i> -bisalicylidene- <i>o</i> -phenylenediamine
SCF	self consistent field
TCNE	tetracyanoethylene
TCNQ	7,7,8,8-tetracyanoquinodimethane
terpy	2,2',2''-terpyridyl
tetraphos	1,1,4,7,10,10-hexaphenyl-1,4,7,10-tetraphosphadecane
TFA	trifluoroacetic acid
tfbb	tetrafluorobenzobarrelene
tfacac	trifluoroacetylacetonato
tfo	triflate, trifluoromethylsulfonate
THF	tetrahydrofuran
thsa	thiosalicylate (2-thiobenzoate)
tht	tetrahydrothiophen
TMBD	<i>NNN'N''</i> -tetramethyl-2-butene-1,4-diamine
TMEDA (tmena)	tetramethylethylenediamine
tmp	2,2,6,6-tetramethylpiperidino
TMS	tetramethylsilane
tol	tolyl
TP	hydrotris(1-pyrazolyl)borate
TP*	hydrotris(2,5-dimethylpyrazolyl)borate

TPP	meso-tetraphenylporphyrin
Trip	2,4,6-triisopropylphenyl
Triph	2,4,6-(triphenyl)phenyl
triphos	1,1,1-tris(diphenylphosphinomethyl)ethane
TRIR	Time resolved infrared (spectroscopy)
Tsi	tris(trimethylsilyl)methyl (Me <sub>3</sub> Si) <sub>3</sub> C
TTF	tetrathiafulvalene
vi	vinyl
WGSR	water gas shift reaction
XPS	X-ray photoelectron spectroscopy
Xyl	xylyl

