

**Cover**

Ball and stick representation of
Grubbs generation II catalyst.

Preface

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Ian Fairlamb and Jason Lynam

Samarium enolates and their application in organic synthesis

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Abbreviations

Ac	acetate
acac	acetylacetonate
acacen	<i>N,N'</i> -ethylenebis(acetylacetonate iminate)
Ad	adamantyl
AIBN	azoisobutyronitrile
ampy	2-amino-6-methylpyridine
Ar	aryl
Ar*	2,4,6-tri(<i>tert</i> -butyl)phenyl
Ar' _f	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-ene-1,3-dione
bpk	benzophenone ketyl (diphenylketyl)
Bpz ₄	tetra(1-pyrazolyl)borate
Bu ^t ₂ bpy	4,4'-di- <i>tert</i> -butyl-2,2'-bipyridine
t-bupy	<i>tert</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)	cobaloxime [Co(dm _g) ₂ derivative]
cod	cycloocta-1,5-diene
coe	cyclooctene
cot	cyclooctatriene
CP/MAS	cross polarisation/magnetic angle spinning
Cp	η ⁵ -cyclopentadienyl
Cp ^R	η ⁵ -alkylcyclopentadienyl

Cp*	η^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
Cytp	PhP(CH ₂ CH ₂ CH ₂ PCy ₂) ₂
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
depn	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-[diphenylphosphine]}
DIPAMP	1,2-bis(phenyl- <i>o</i> -anisoylphosphino)ethane
diphos	1,2-bis(diphenylphosphino)ethane
dipp	2,6-diisopropylphenyl
dipyam	di-(2-pyridyl)amine
DMAD	dimethyl acetylenedicarboxylate
DMAP	2-dimethylaminopyridine
dmbpy	dimethylbipyridine
DME	1,2-dimethoxyethane
DMF	<i>N,N</i> -dimethylformamide
dmg	dimethylglyoximate
dmgH	monoanion of dimethylglyoxime
dmgH ₂	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 ₆ acac	hexafluoroacetylacetonate
Fc	ferrocenyl
Fe*	Fe(CO) ₂ Cp*
Fp	Fe(CO) ₂ Cp
Fp'	Fe(CO) ₂ η ⁵ -(C ₅ H ₄ Me)
FTIR	Fourier transform infrared
FVP	flash vacuum pyrolysis
glyme	ethyleneglycol dimethyl ether
GVB	generalised valence bond
HBpz3	tris(pyrazolyl)borate
HBpz*3	tris(3,5-dimethylpyrazolyl)borate
H ₄ 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 localised orbitals
im	imidazole
Is*	2,4,6-triisopropylphenyl
ISEELS	inner shell electron energy loss spectroscopy
KTp	potassium hydrotris(1-pyrazolyl)borate
LDA	lithium diisopropylamide
LiDBB	lithium di- <i>tert</i> -butylbiphenyl
LMCT	ligand to metal charge transfer
LNCC	low nuclearity carbonyl cluster

MAO	methyl alumoxane
Me ₂ bpy	4,4'-dimethyl-2,2'-bipyridyl
Me ₆ [14]dieneN ₄	5,7,7,12,14,14-hexamethyl-1,4,8,11-tetraazacyclotetradeca-4,11-diene
Me ₆ [14]N ₄	5,5,7,12,12,14-hexamethyl-1,4,8,11-tetraazacyclotetradecane
4,7-Me ₂ phen	4,7-dimethyl-1,10-phenanthroline
3,4,7,8-Me ₄ 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
nbd	norbornadiene
NBS	<i>N</i> -bromosuccinimide
NCS	<i>N</i> -chlorosuccinimide
NCT	neutron capture theory
Neo	neopentyl
Np	1-naphthyl
np ₃	N(CH ₂ CH ₂ PPh ₂) ₃
nta	nitritotriacetate
OEP	octaethylporphyrin
OTf	trifluoromethanesulfonate (triflate)
OTs	<i>p</i> -toluenesulfonate (tosylate)
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 ₃	P(CH ₂ CH ₂ PPh ₂) ₃
[PPN] ⁺	[(Ph ₃ P) ₂ N] ⁺
py	pyridine
pydz	pyridazine
pz	pyrazolyl
R-PROPHOS	(<i>R</i>)-(+)–1,2-bis(diphenylphosphino)propane
R,R-SKEWPHOS	(2 <i>R</i> ,4 <i>R</i>)-bis(diphenylphosphino)pentane
RDF	radial distribution function
ROMP	ring opening metathesis polymerisation

sal	salicylaldehyde
salen	<i>N,N'</i> -bis(salicylaldehyde)ethylenediamine
saloph	<i>N,N</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
THF	tetrahydrofuran
thsa	thiosalicylate (2-thiobenzoate)
tht	tetrahydrothiophen
TMBD	<i>N,N,N',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	<i>meso</i> -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 ₃ Si) ₃ C
TTF	tetrathiafulvalene
vi	vinyl
WGSR	water gas shift reaction
XPS	X-ray photoelectron spectroscopy
Xyl	xylyl

