

## *Acknowledgement*

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*Nidhi Sogani*

## List of Abbreviation

DA	Diels-Alder
HDA	Hetero-Diels-Alder
NED	Normal electron demand
IED	Inverse electron demand
FMO	Frontier molecular orbital
HOMO	Highest occupied molecular orbital
LUMO	Lowest unoccupied molecular orbital
TADDOL	$\alpha,\alpha,\alpha',\alpha'$ -tetraaryl-1,3-dioxolane-4,5-dimethanol
DIANANE	<i>endo,endo</i> -2,5-diaminonorbornane
BINOL	1,1'-bi-2-naphthol
PEG	Polyethylene glycol
NOBIN	2-amino-2'-hydroxy-1,1'-binaphthyl
BAMOL	1,1'-biaryl-2,2'-dimethanol
DABCO	1,4-diazabicyclo[2.2.2]octane
NHC	N-heterocyclic carbene
DMAP	Dimethylaminopyridine
DFT	Density functional theory
ZPE	Zero-point correction energy
IRC	Intrinsic reaction coordinate
NBO	Natural bond orbital
WBI	Wiberg bond indices
NICS	Nucleus independent chemical shift

GIAO	Gauge-including atomic orbital
SCRF	Self consistent reaction field
Iefpcm	Integral equation formalism polarizable continuum model
TS	Transition structure
Int	Intermediate
TLC	Thin layer chromatography
NMR	Nuclear Magnetic Resonance
DMB	2,3-dimethyl-1,3-butadiene
EWG	Electron withdrawing group
EDG	Electron donating group
eV	Electron Volt
MS	Molecular Sieves
<i>ee</i>	Enantiomeric excess
s	Singlet
D	Doublet
T	Triplet
dd	Doublet of double
mL	Milli liter