Organometallics Chemistry
(CHEM-753)

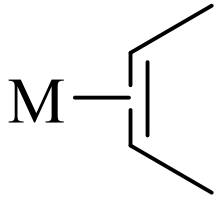
Online Lectures (OrganoLi)

Dr Abdul Rauf Raza
(*Associate Professor*)
Department of Chemistry
University of Sargodha, Sargodha

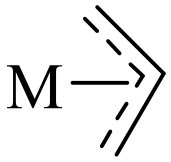
Hapticity (η^1, η^2, η^3, η^4, η^5, η^6 etc.)

Hapticity: Number of carbon atoms of a ligand directly attached to a metal.

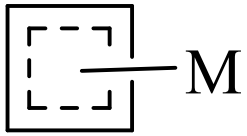
1 Monohapto

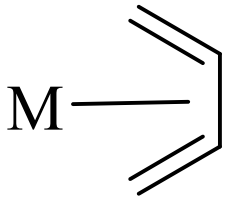


2 Dihapto



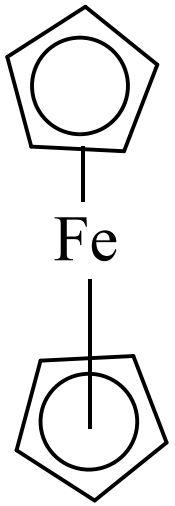
3 Trihapto





4 **5**

Tetrahapto



6 Pentahapto

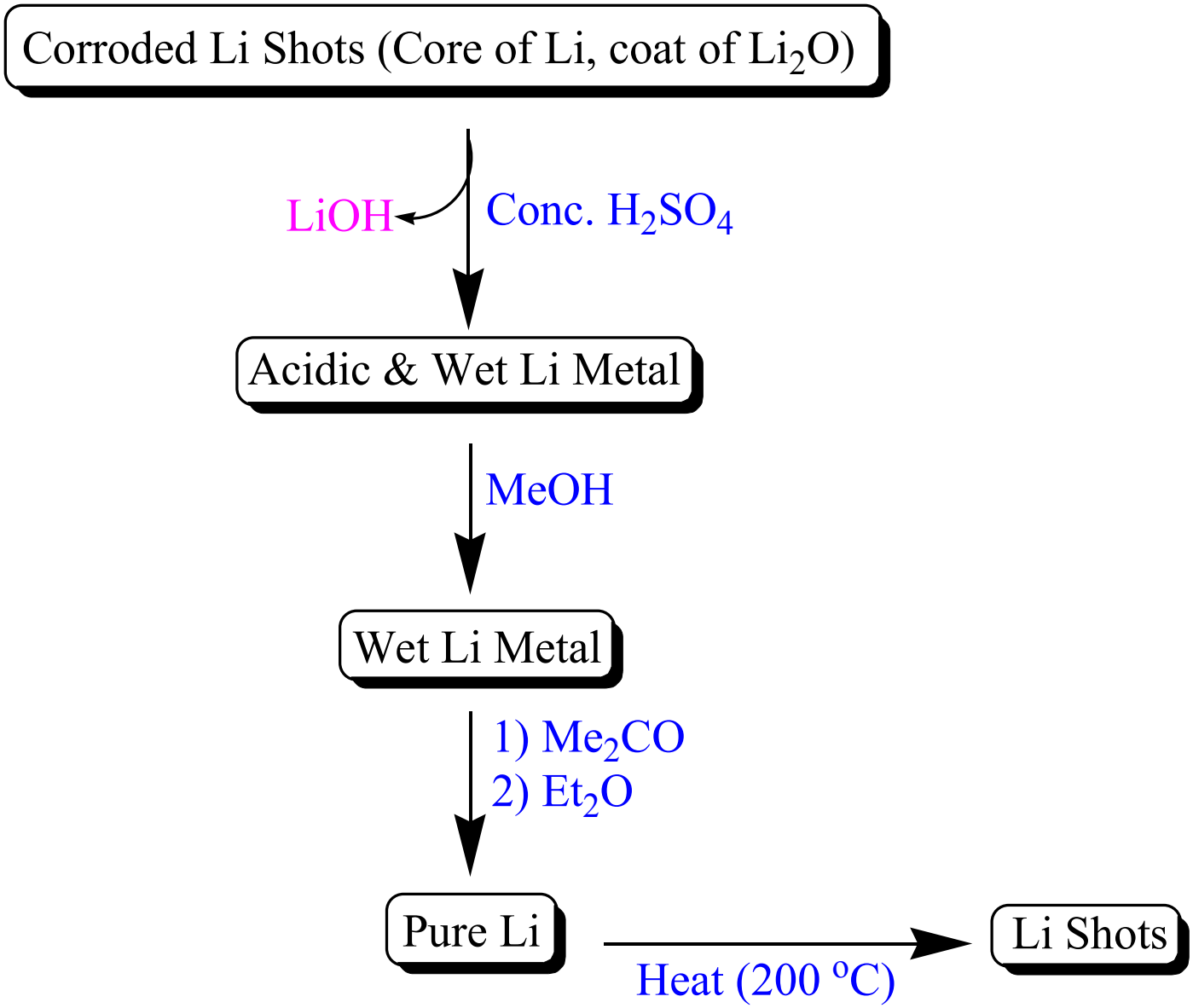
OrganoLi & OrganoMg (Grignard)

s-Block metals

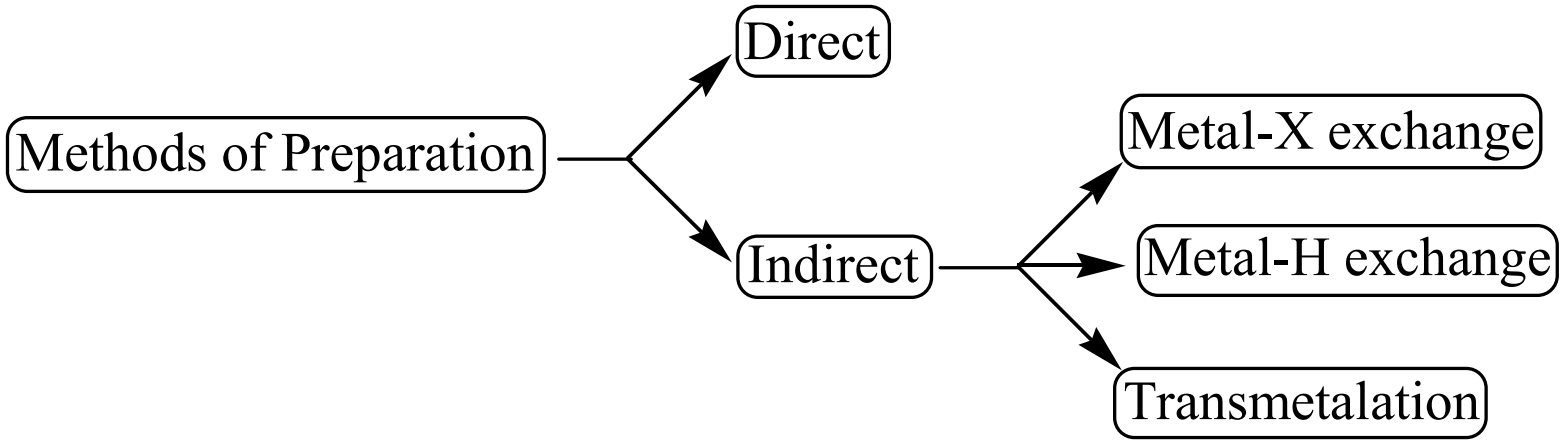
Group-I	Group-II
H	
Li	Be
Na	Mg
K	Ca
Rb	Sr
Cs	Ba
Fr	Ra

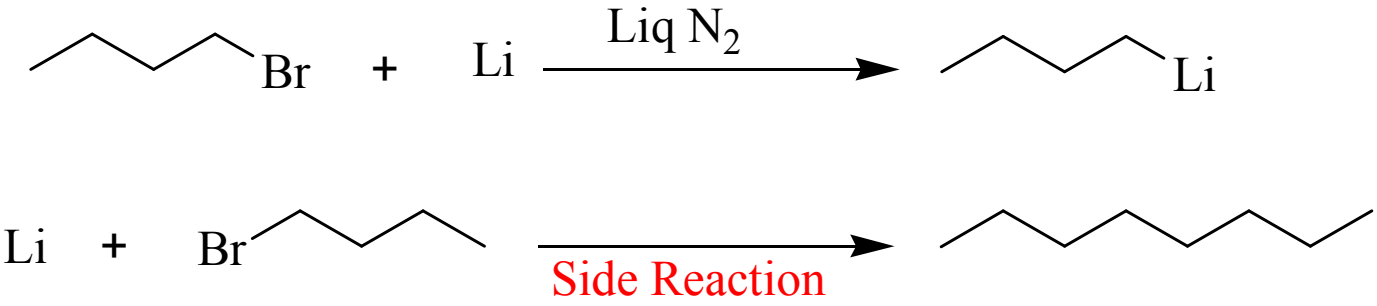
	Li	Mg	C
Electronegativity (Pauling's units)	0.98	1.31	2.52
Atomic radii (Å)	1.52	1.60	
Density (g/cm3)	0.53	1.74	
Melting Point (C)	180	650	

Activation of Li

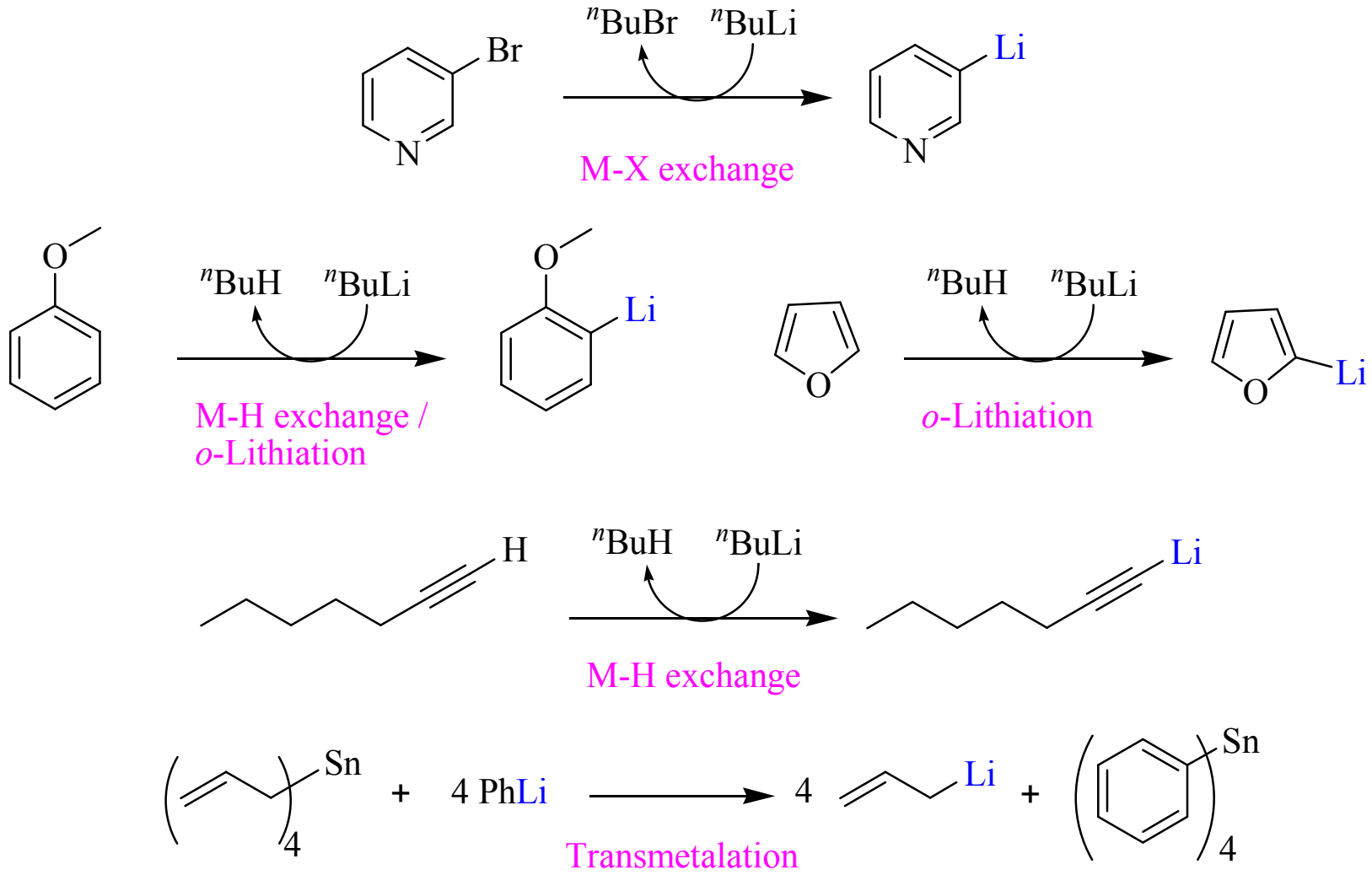


Methods of Preparation of Li

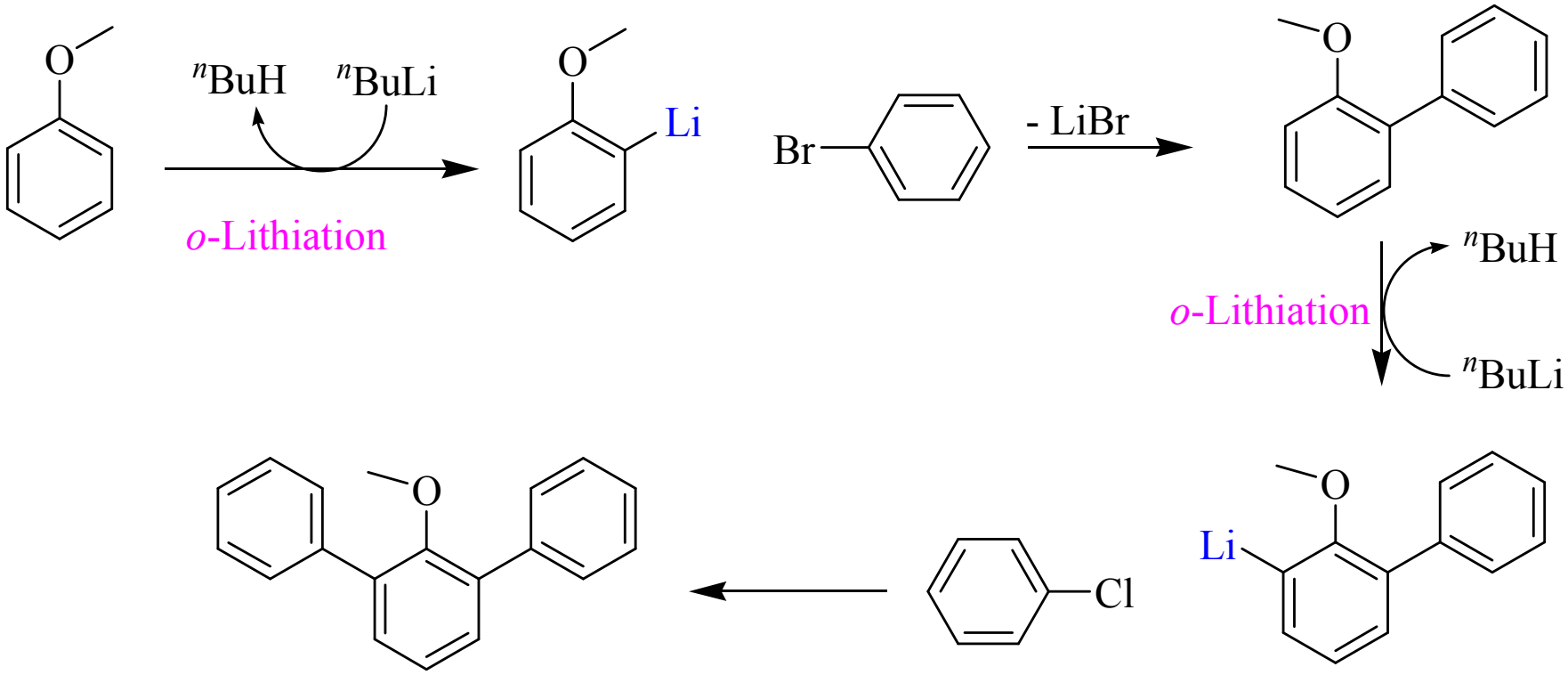




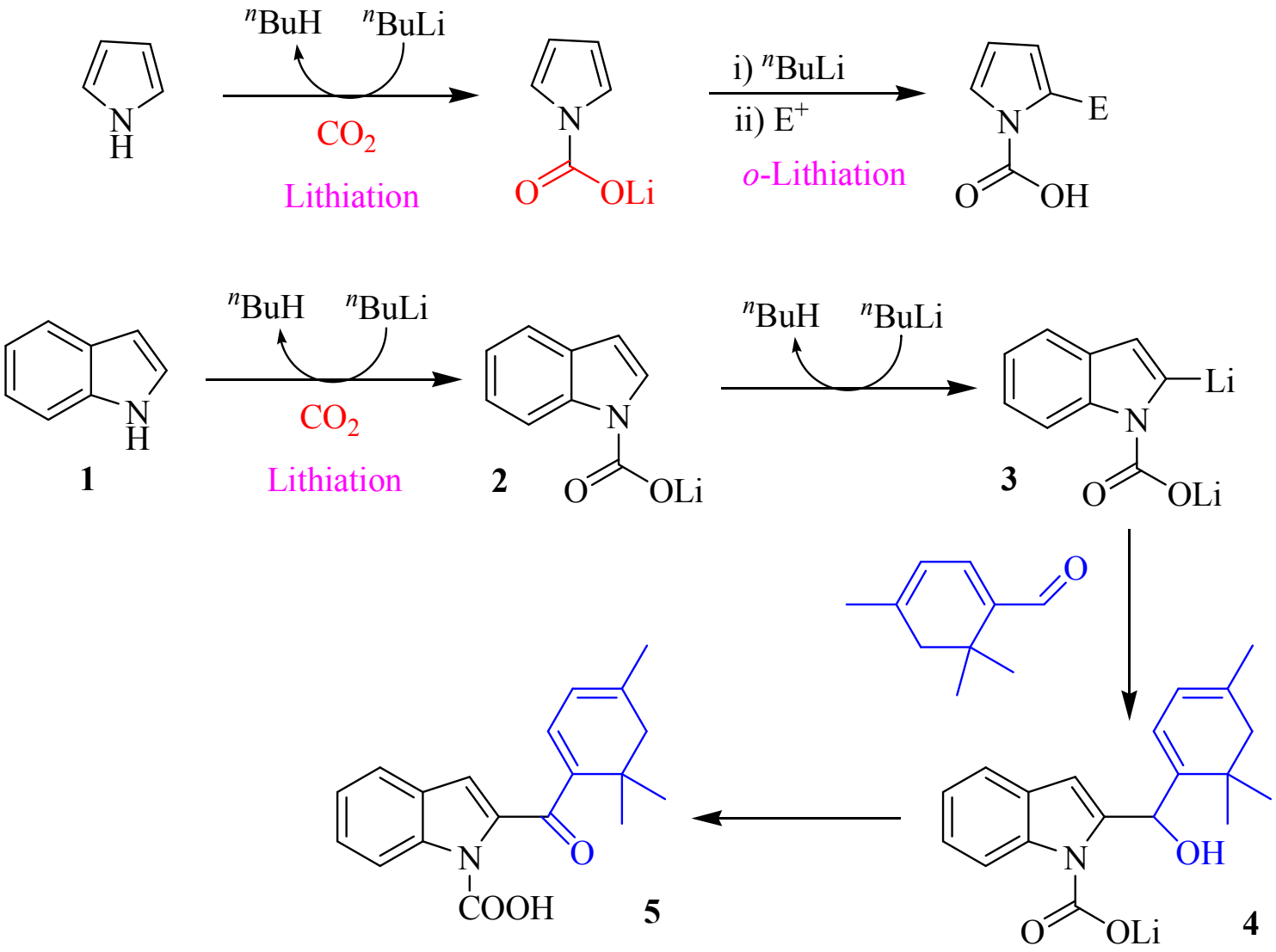
Indirect Methods of Preparation



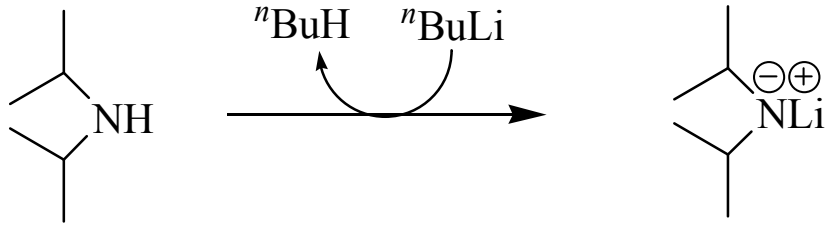
Synthetic Applications



Synthetic Applications

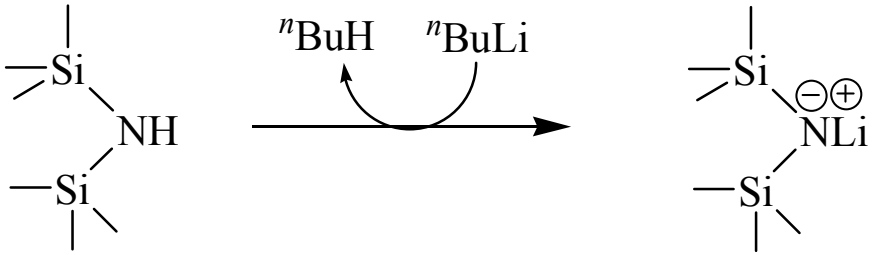


Synthetic Applications



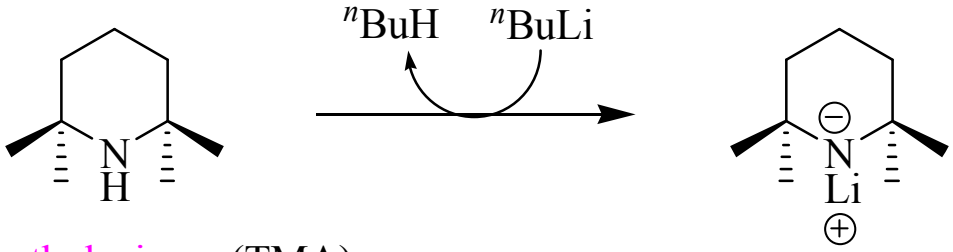
Di-*iso*-propylamine

Lithium di-*iso*-propylamide (LDA)



Hexamethyldisilylamine

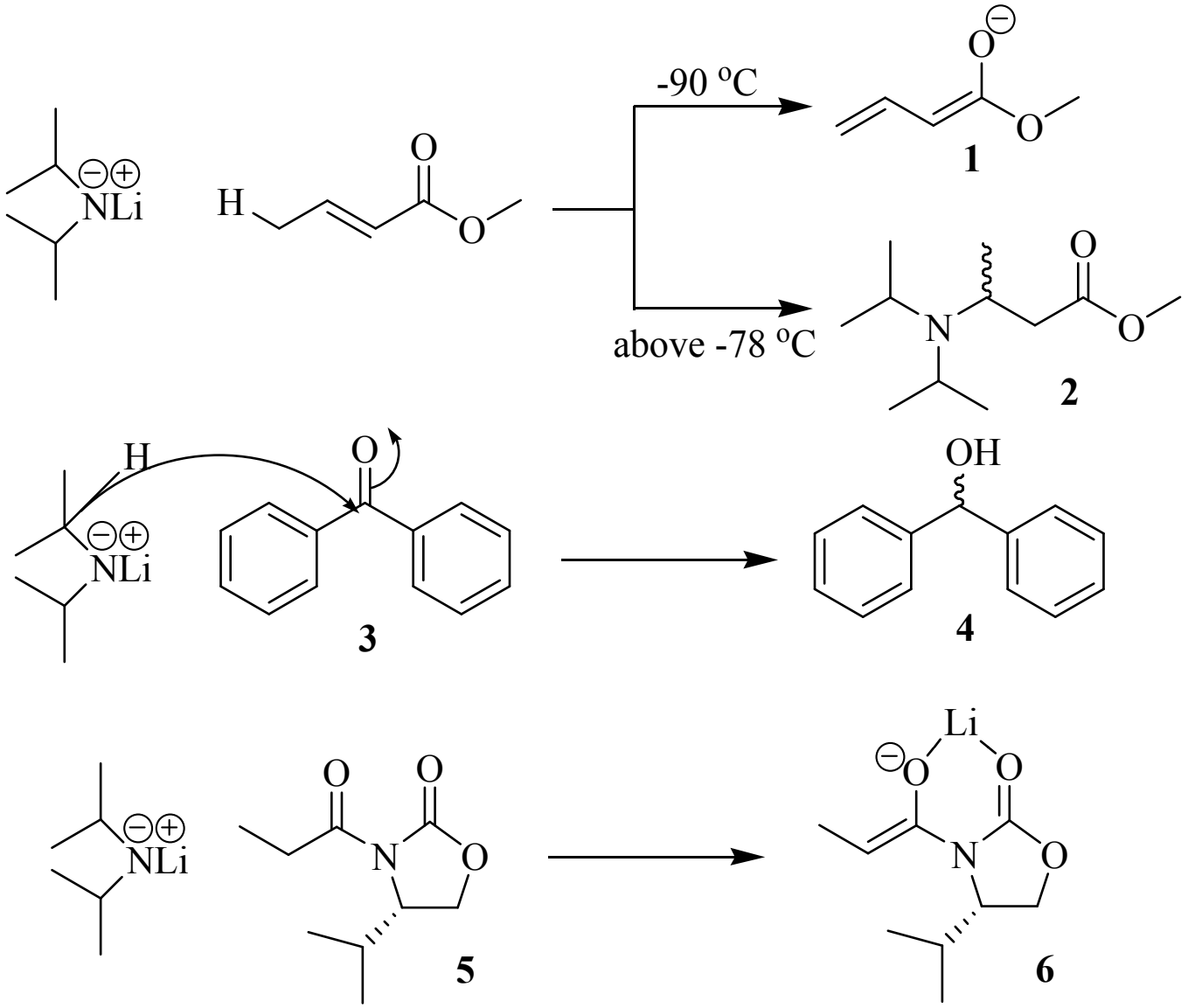
Lithium hexamethyldisilylazide (LHMDS)



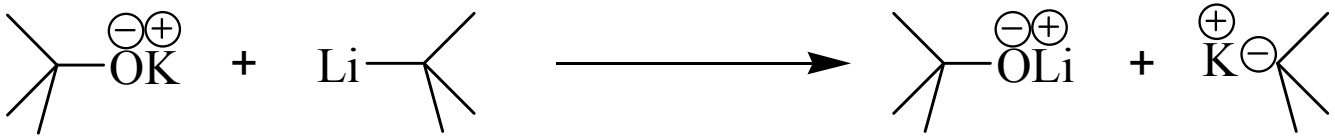
Tetramethylazirane (TMA)

Lithium tetramethylazirane (LiTMA)

Synthetic Applications of LDA

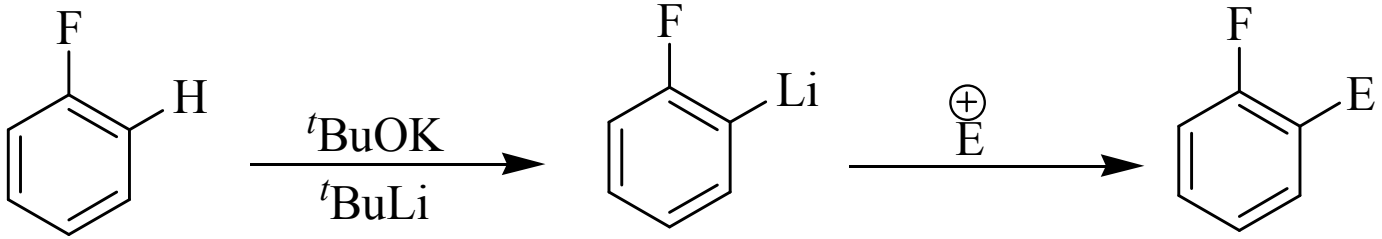


Super Base



Super Base

Deprotonates a proton with pK_a 35-40



Tetrahedron, **46** (1990), 5633