

Key Properties of Ligand Building Blocks

Convergent Ligands: Donor atoms have correct configuration to bind to single metal

- bidentate (ket)
- indentate (not good for tet, good for oct)

Divergent Ligands: Donor sites cannot bind to single metal centre.

- **Hypodentate** - convergent sites but cannot form 1:1 complex with metal centre involving all 4 N atoms.

Key Properties of Metal Building Blocks.

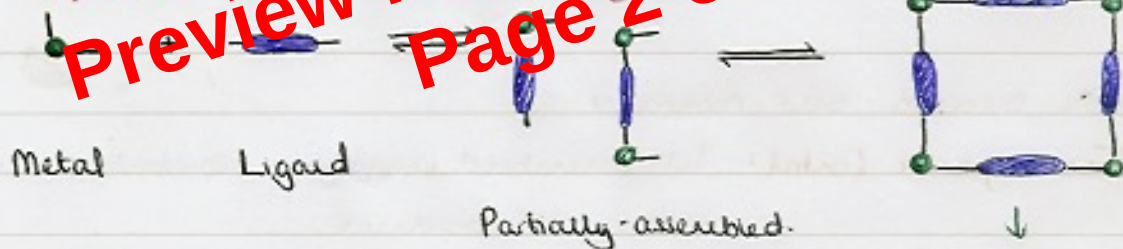
Tetrahedral: Perpendicular binding of 2 bidentates.

Octahedral: Perpendicular binding of 2 bidentates.

Square Planar: Co-planar binding of 2 bidentates.

1.

Synthesis of a Molecular Square



2. **Molecular Grids: Synthetic Strategy.**

2 bidentates coordinated to tetrahedral metal ion must be orthogonal:



Extending to linear poly-dentate ligand systems leads to **nanowire grids**.