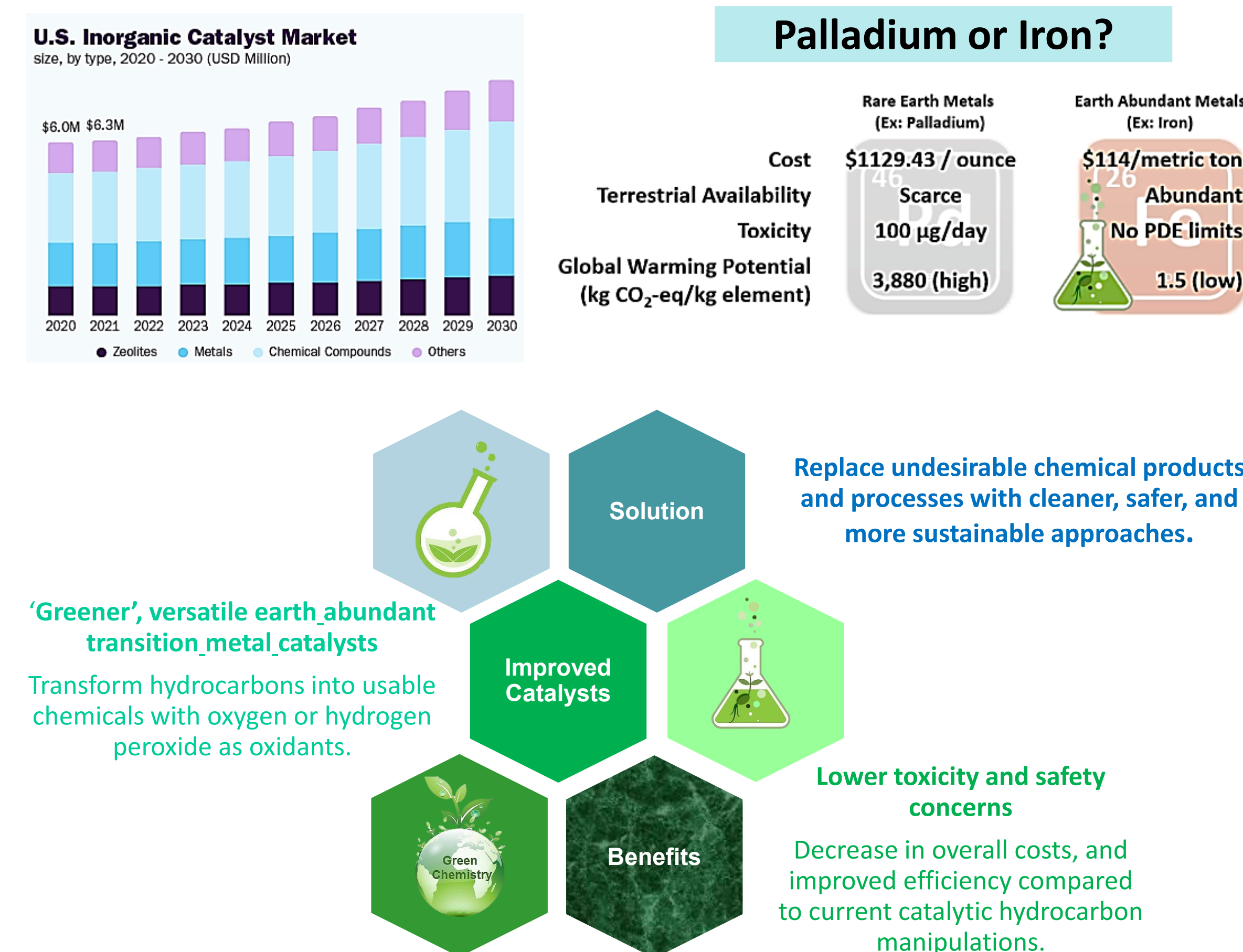
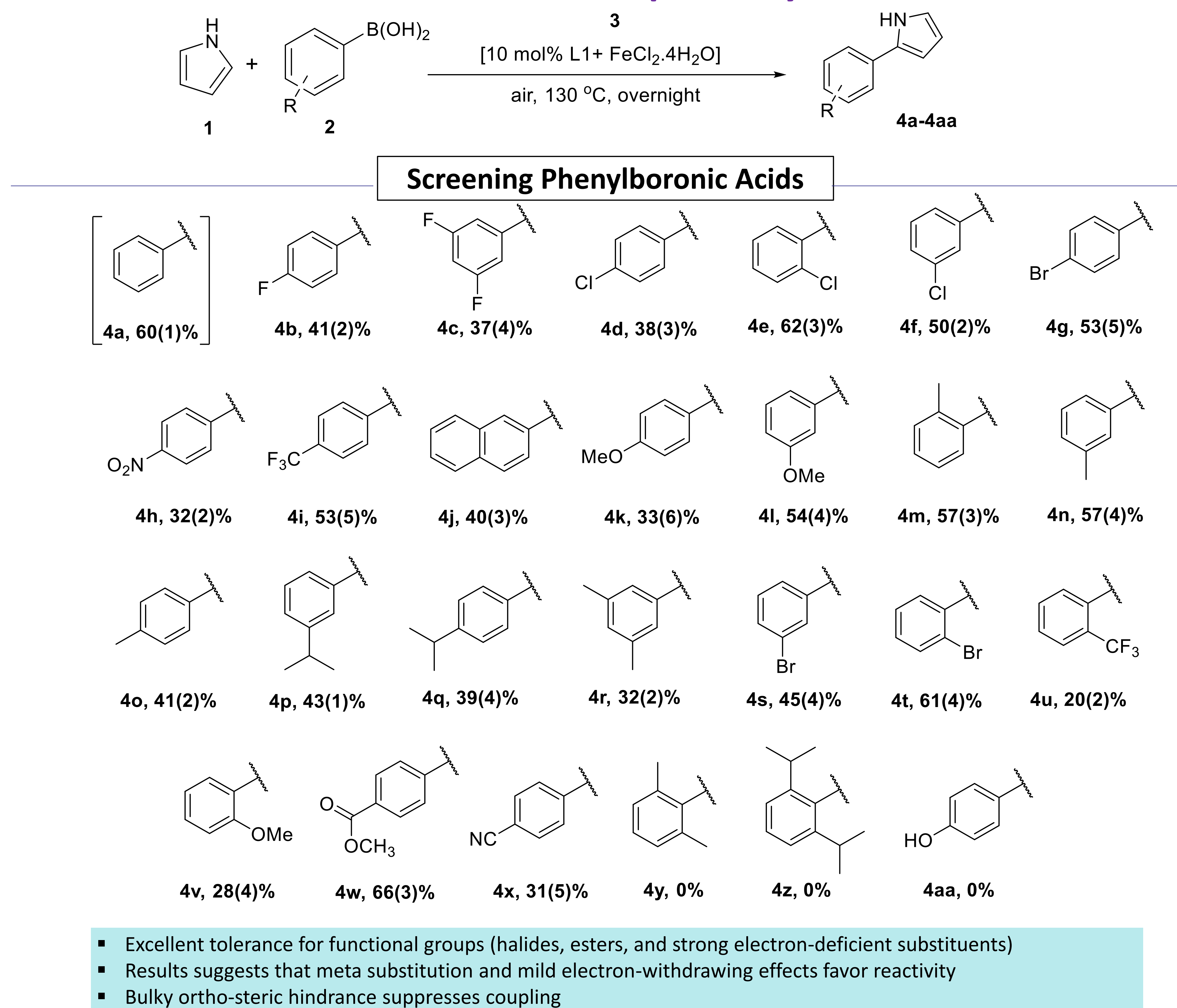


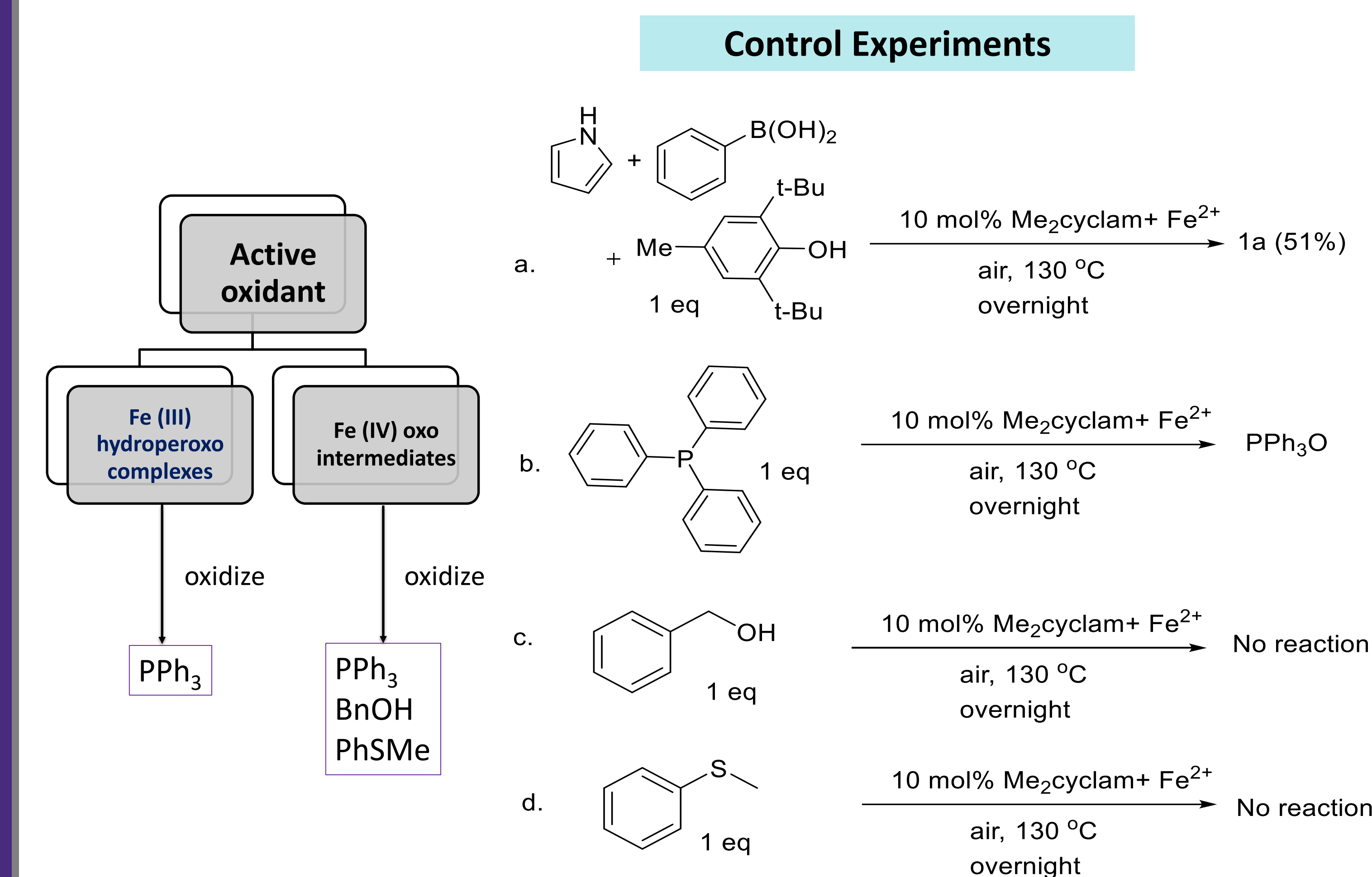
Introduction



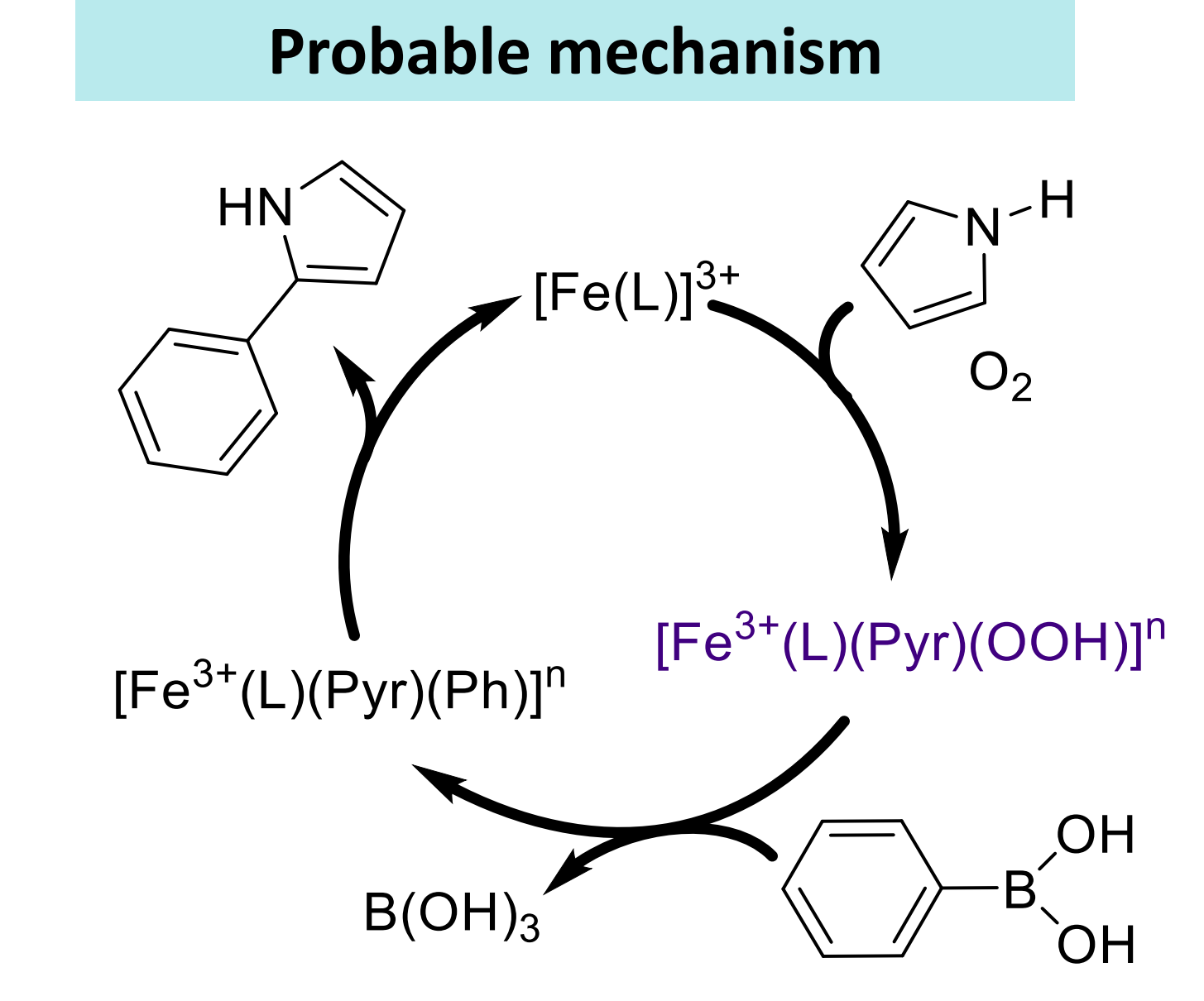
Substrate Scope Study



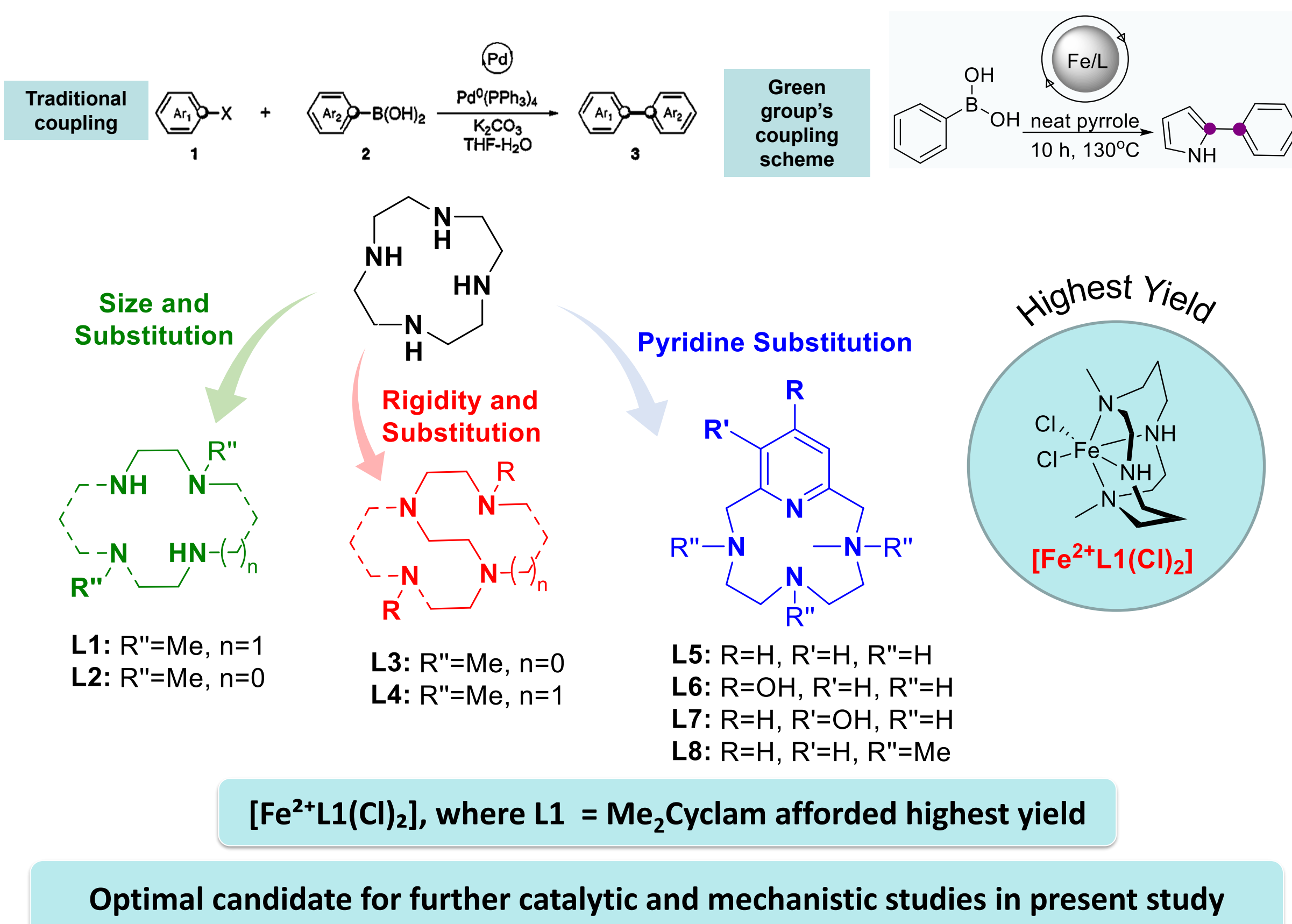
Mechanistic Investigation



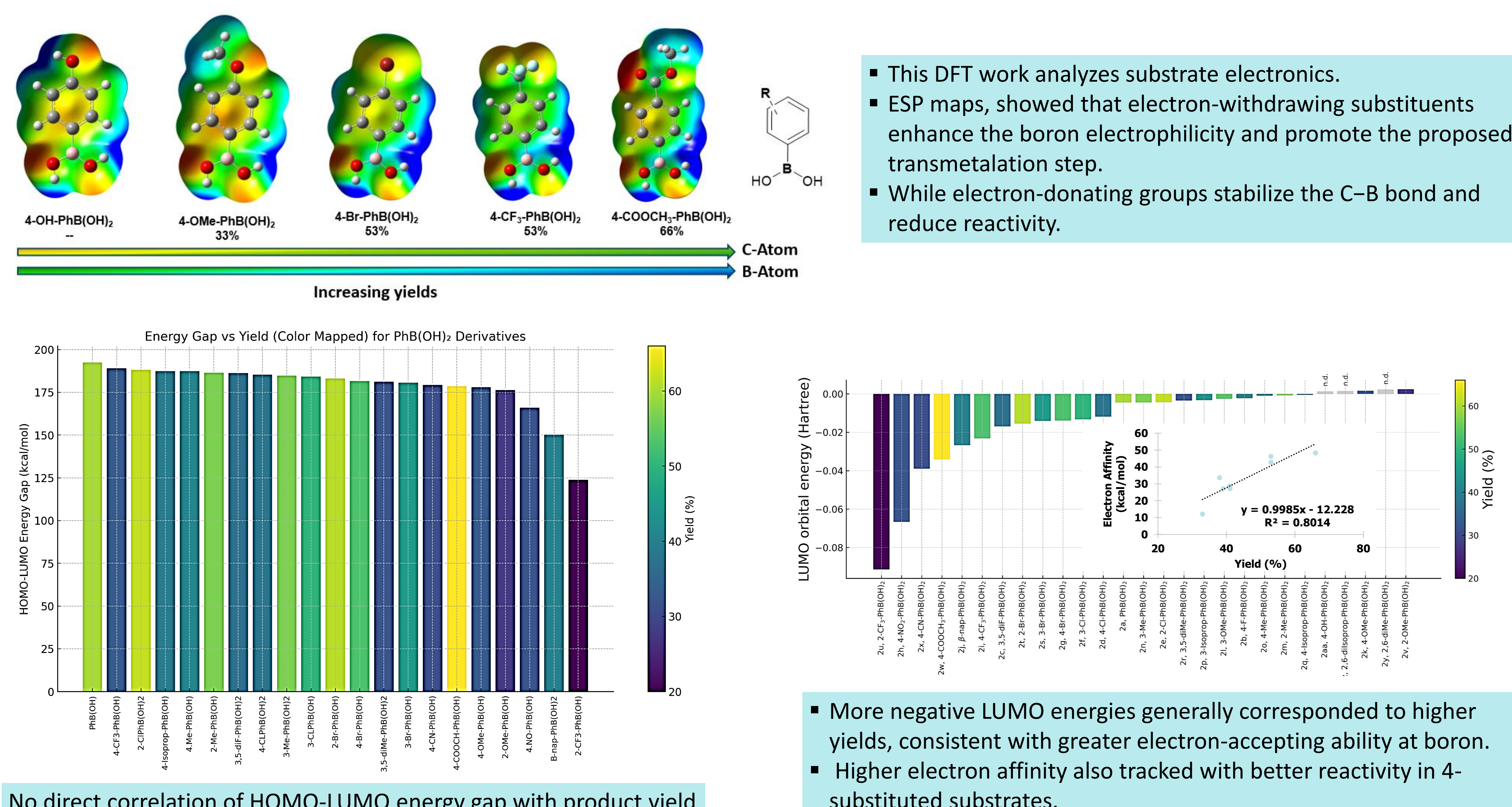
- Mechanistic studies ruled out outer-sphere radical pathways
- No high-valent iron complexes.
- Do suggest iron(III)-hydroperoxo species as the operative oxidant.



Previous Work



Computational (DFT) Studies



Conclusion

Substrate Scope: Sterics (EWG vs EDG), Functional Group Compatibility. Iron Salts Optimized, Substrate Scope Established. 20-66% Yield, 24 Substrates.

Reaction Insights: Increasing Yields (C-atom, B-atom). Mechanism: Inner-sphere Radical Pathway, No High Valent Iron. DFT: Electrophile Drives Reactivity.

Future studies: Establish Fe(III)-OOH as the operative oxidant under catalytic condition through experimental and computed studies.

Catalytic Reaction Design

Work flow: Phenyl boronic acid + Ligand + Pyrrole → Product.

¹H NMR Yield Determination: DMDPS internal standard added. Key resonances: Pyrrole SM, 2-phenyl pyrrole, DMDPS.

Reaction conditions: 10 µL DMDPS, 1 mL 0.885 g DMDPS, 1 mL DMDPS, 8 mL 0.5 g, 1 mL DMDPS, 1 mL DMDPS, 1.43, 1.9 g product, 1 mol product.

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