Molecular Design Concepts and Manufacturing Feasibilities of New-Generation Photo-initiators

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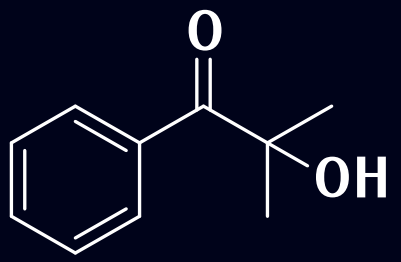
Searching for Ideal Photo-initiators

High Performance
No Benzene Emission
No or Low VOC Emissions
Reduced Yellowing
Low Migration
Enhanced Solubility and Stability
Enhanced Freedom-of-Operation
Low Biological & Ecological Toxicity
Curing with LED Light

But Still
Low Cost !!!

Beyond The Benchmarks



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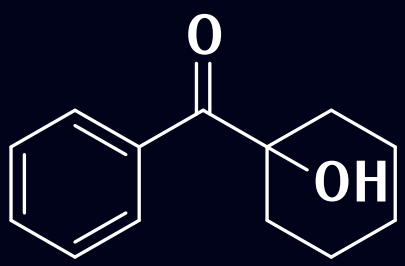

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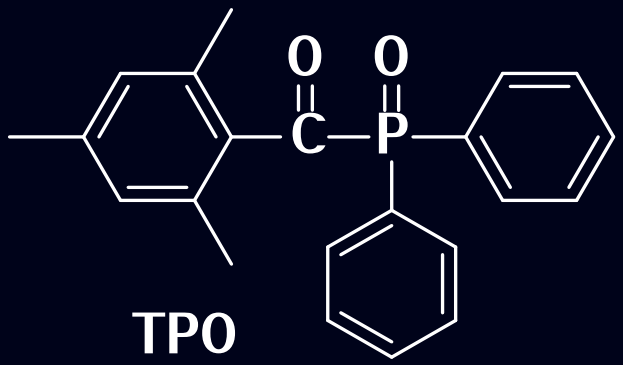
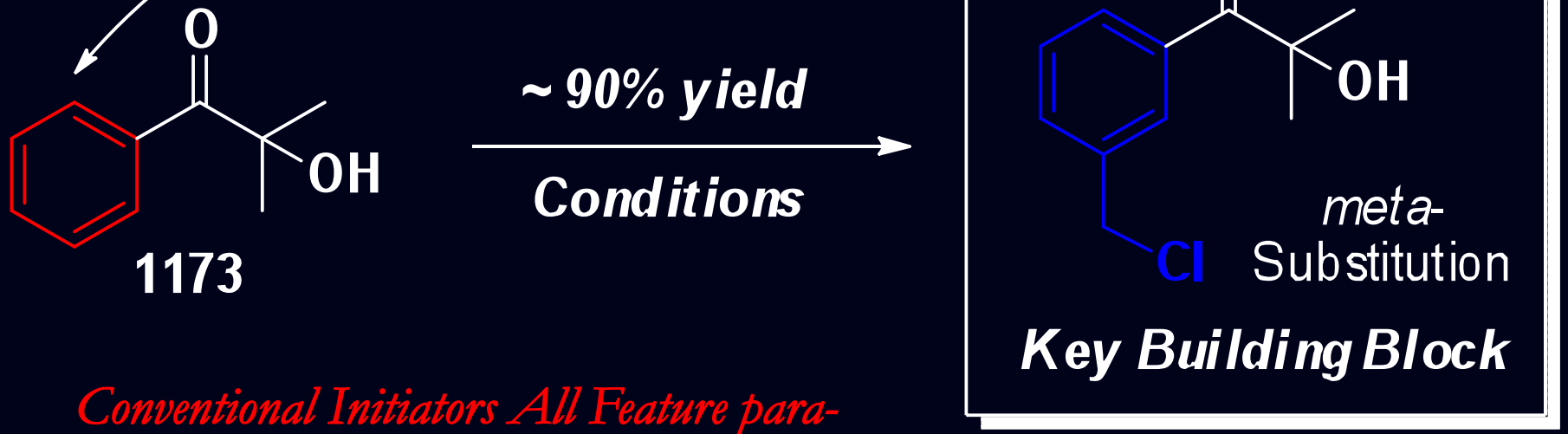


TPO

Growing Technical and Regulatory Needs Demand More Efficient, Environment & Health-Friendly, and Cost-Effective Products

New Discovery Offers Big Opportunities

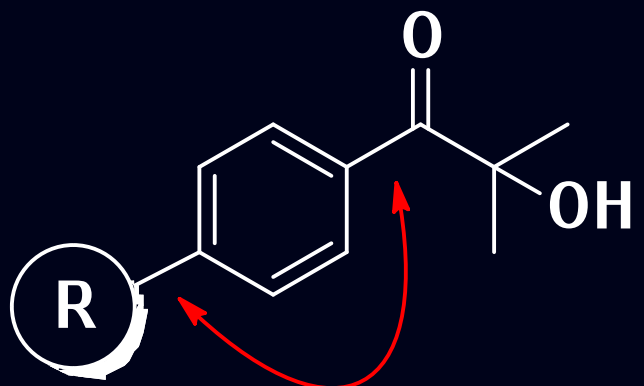
Single-Step Non-Carcinogenic Jump

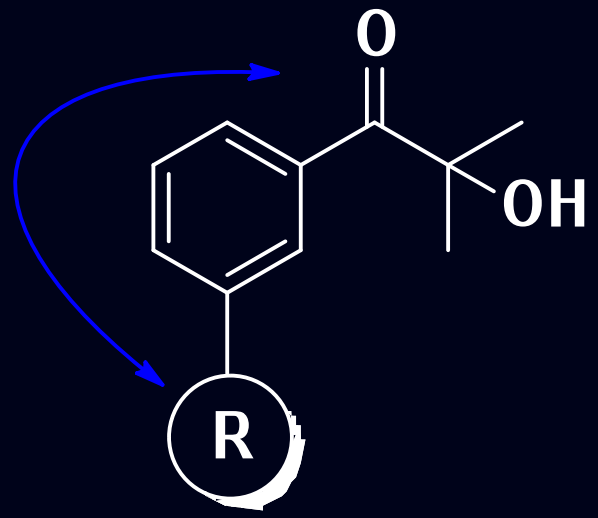


Conventional Initiators All Feature para-Substitution Pattern

The Building-Block Approach Enables Rapid and Economic Access into Multifunctional Initiators.

Why *meta*-Substitution Pattern !?





***para*-Substitution**

***meta*-Substitution**

Reduced Conjugation
Enhanced Dipole

meta-

Reduced Yellowing
Enhanced Solubility

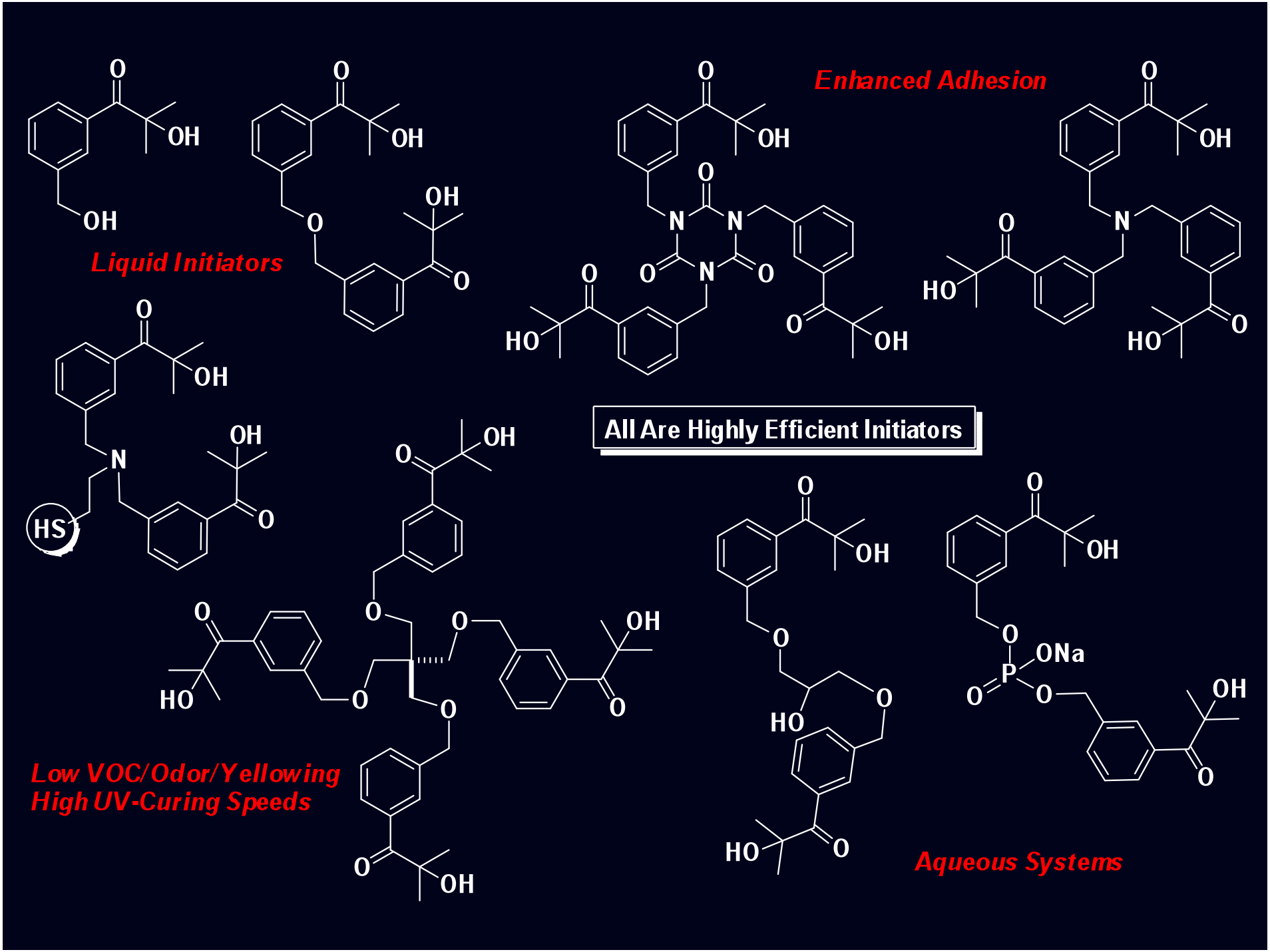
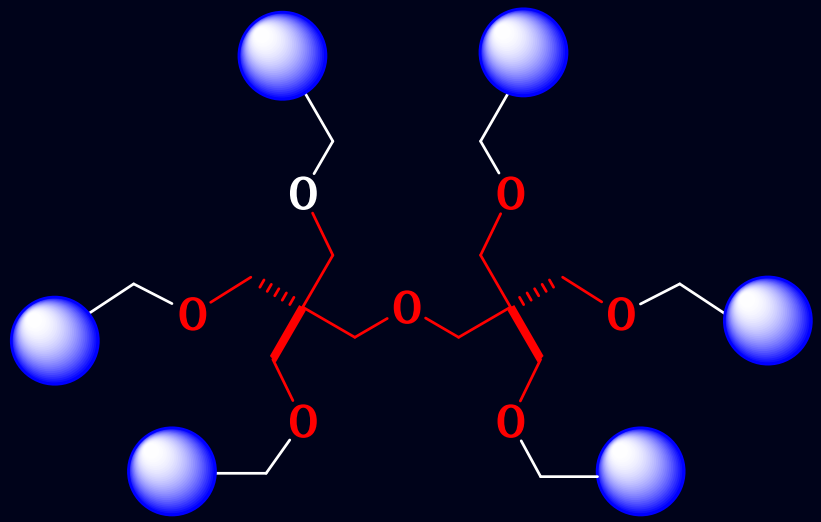

Liquid Initiators
Enhanced Adhesion
All Are Highly Efficient Initiators
Low VOC/Odor/Yellowing
High UV-Curing Speeds
Aqueous Systems

Photo-initiators with Higher Functionalities



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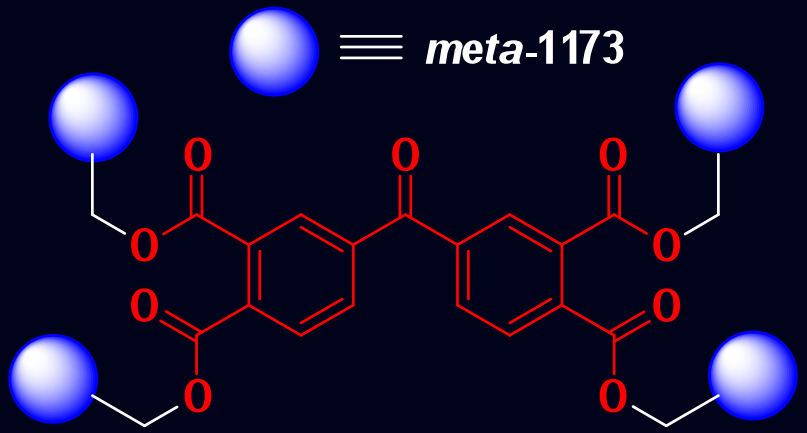
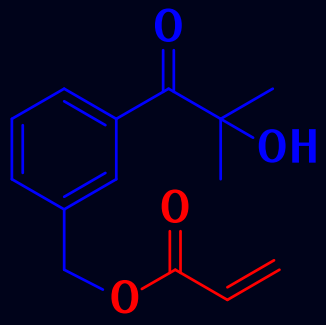
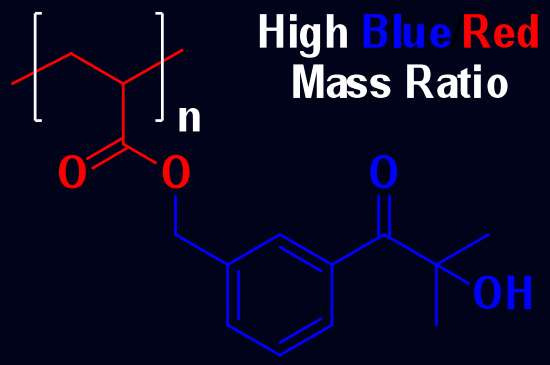


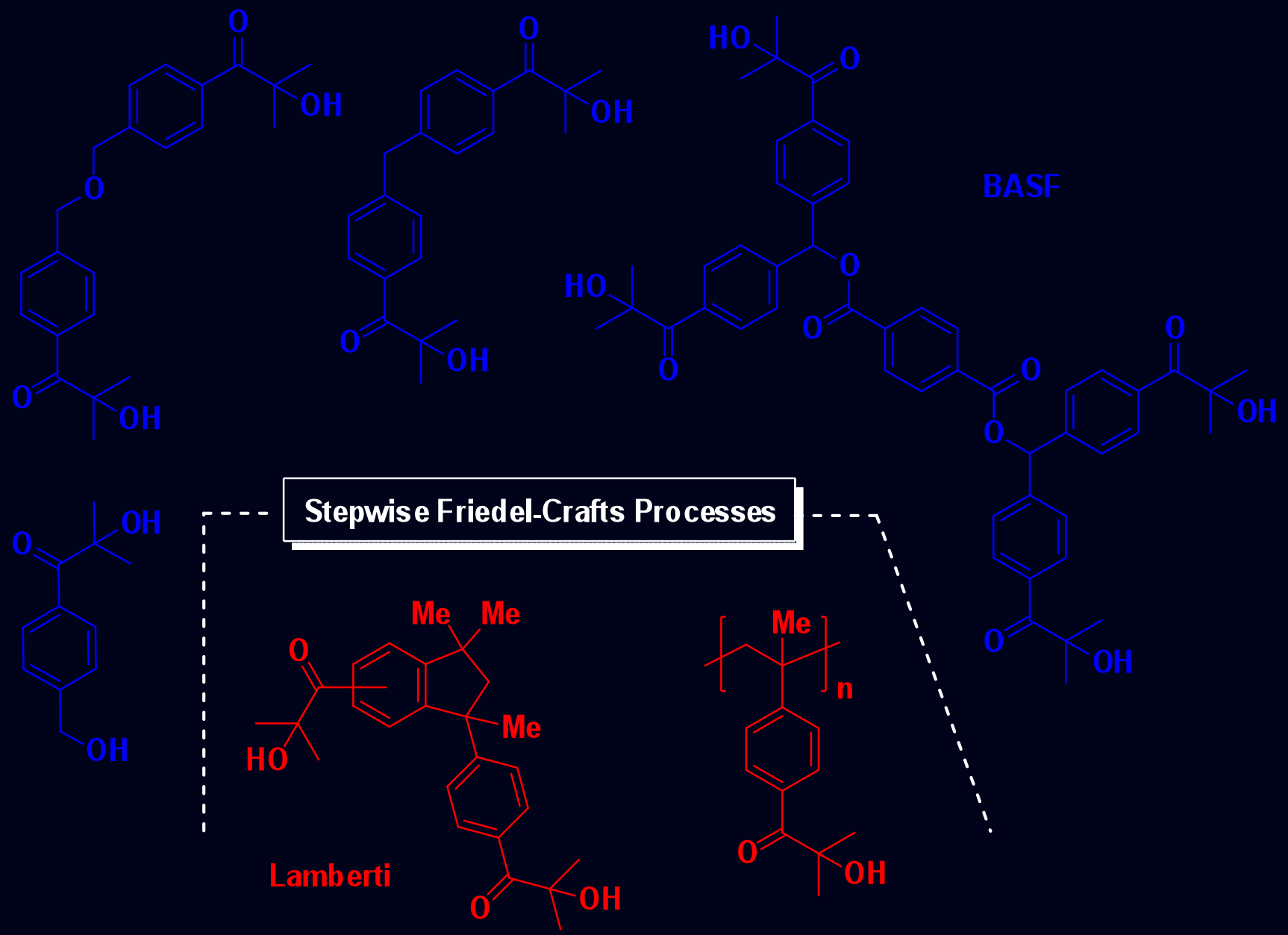


Controlled Polymerization

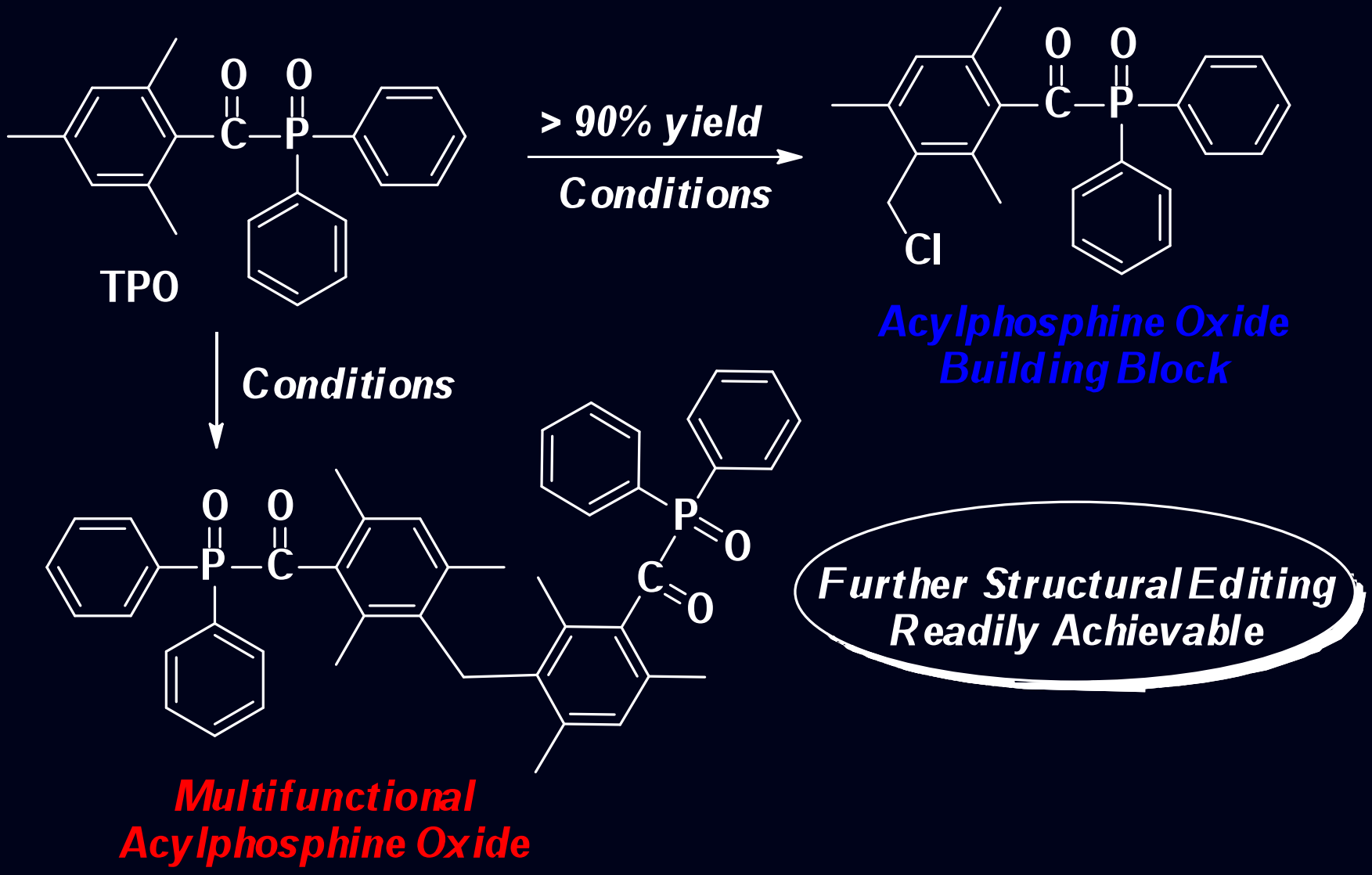


The Strength of Building-Block Approach Lies in Its Ability to Assemble Diverse Initiator Structures of Tailored Properties.

Complementary to Known Arts



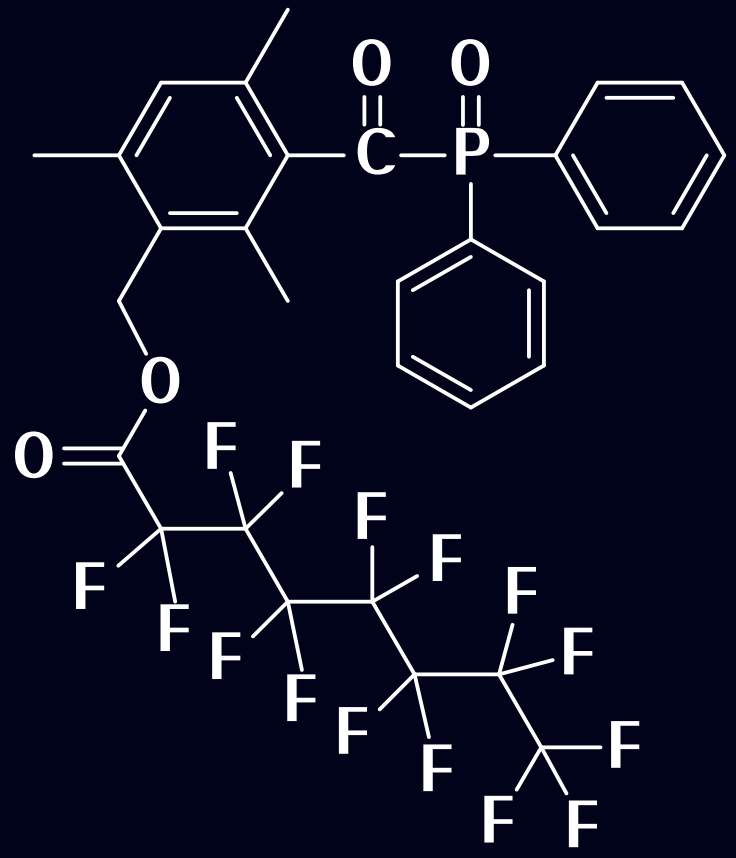
Similar Magic Works on Acylphosphine Oxides

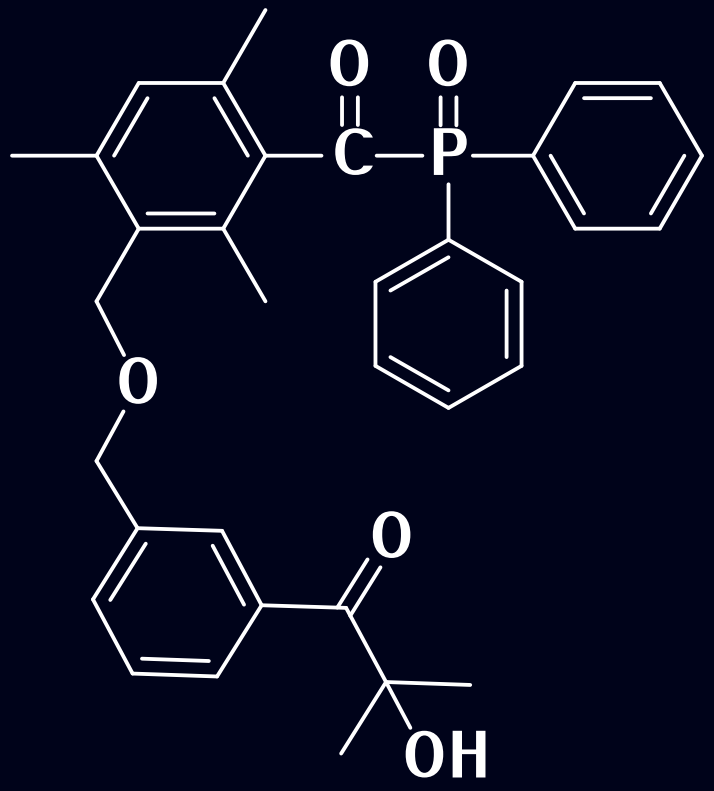


First Examples of DIRECT Functionalizations on APOs

Not Just Novel Structures, Novel Functions Too !

Examples: APOs Offering Excellent Surface Curing





Proprietary Formulations As Well

Thank You for Your Attention!

Questions ?

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