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Dipartimento di Scienze e Tecnologie Chimiche

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Enantioselective Catalysis by Higher Order Organosuperbase

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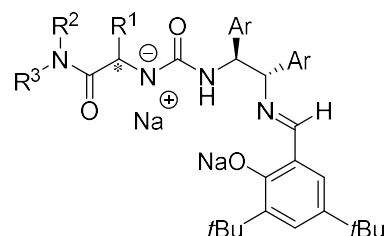
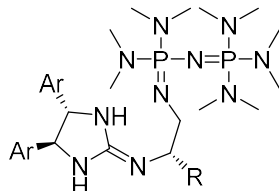
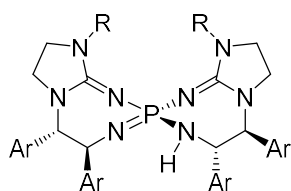
Enantioselective Catalysis by Higher Order Organosuperbase

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Abstract: The development of new molecular catalysts is one of the keys for paving the way to novel transformations. In the field of chiral Brønsted base catalysis, which is one of the most fundamental and environmentally benign methodologies for the direct synthesis of enantioenriched compounds, a long-standing issue is the expansion of the scope of pronucleophiles that are applicable to the enantioselective reactions. However, the insufficient basicity of reported conventional organobases limits the scope of pronucleophiles to highly acidic compounds, such as β -dicarbonyl compounds and nitroalkanes. The development of a new generation of chiral Brønsted base catalysts that can overcome the intrinsic limitations of pronucleophiles is highly desirable. Our research program has been focusing on the development of much stronger chiral organobases, namely, chiral higher order organosuperbases. In this presentation, three types of chiral higher order organosuperbase catalysts (**1-3**) are introduced (**Figure**).



bis(guanidino)iminophosphorane catalyst (*M*)-**1** cooperative binary base catalyst **2** ureate having phenoxide and Shciff base units **3**

Figure. Higher Order Organosuperbases developed in our laboratory.