

Utilization of NaOtBu-O₂ System in Organic Synthesis

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Abstract

In recent years, mankind has become increasingly interested in biomass as natural energy resource, especially in view of the depletion of fossil fuels caused by injudicious use and related environmental impact. Among biomass materials, lignin has attracted attention because of its synthetic relevance as a potential supplier of aromatics and promising alternative source of hydrocarbon fuels. In our laboratory, we recently demonstrated for the first time that a simple base-promoted oxidative fragmentation of lignin model compounds as key to the corresponding aromatic alcohols and acids, which represent an unprecedented product pattern, under an oxygen atmosphere.^[1]

In addition, we recently addressed our efforts to the design and development of the following green protocols utilizing NaOtBu-O₂ system in organic synthesis: (transition) metal-free, direct oxidation and oxidative dehomologation reaction.^[2]

Individual reaction with the detailed mechanism will be present in this presentation.

References

[1] Lee, T.W.; Yang, J.W. *Green Chem.* **2018**, *20*, 3761.

[2] (a) Kim, S. M.; Kim, Y. S.; Kim, D. W.; Yang, J. W. *Green Chem.* **2012**, *14*, 2996 (b) Kim, S. M.; Kim, D. W.; Yang, J. W. *Org. Lett.* **2014**, *16*, 2876; (c) Kim, S. M.; Shin, H. Y.; Kim, D. W.; Yang, J. W. *ChemSusChem* **2016**, *9*, 241.