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Stellingen

Behorende bij het proefschrift

Advancing selectivity control with highly reactive organometallic reagents

Massimo Giannerini

1. The difference in pK_a between organozirconium (**Nature**, 517, 351, 2015) and Grignard compounds (previously used in copper-catalysed dynamic kinetic asymmetric transformation with racemic substrates see **Chem. Commun.** 3868, 2009) is much less than 25 orders of magnitude.
2. In spite of their unrivalled functional group tolerance and the myriad of available protocols for the cross-coupling of boron reagents, chemists in academia chose organoborons more readily only due to their commercial availability without considering more prospectful alternatives.
3. The use of a syringe pump does not hamper the execution of the cross-coupling with organolithium compounds. In the example reported in Chapter 4 Scheme 10 of this thesis, including the 1.5 minute necessary to set up the syringe pump, the coupling with butyllithium proceeded in 61.5 min, while the one with the corresponding boron reagent took 2880 min. Waiting 2818.5 minutes longer to obtain the same result is by far more inconvenient than spending 1.5 minutes setting up a syringe pump.
4. When a referee comment is demonstrated to be scientifically unfounded, he/she should be called upon to defend his/her statements in open court, without the protection of the anonymity.
5. Anonymous submission of a manuscript would help limit the phenomenon of excessive self-citation.
6. To say “this is not going to work; it is a waste a time” in chemistry is an easy way to be right most of the time. Nevertheless chemistry is an empirical discipline and every idea should be tested and discouragement on the basis of negative expected outcomes should not be encouraged.
7. Having a compound suspended or floating over a medium does not imply that the medium itself can be referred as a traditional solvent and that it plays the same role that a solvent usually exerts in homogeneous systems. (see **Angew. Chem. Int. Ed.** 53, 5969, 2014).
8. Increasing competition in academic research is leading to increased scientific and ethical misconduct rather than improving productivity.