

Dr. R. H. Tale Profile

Dr. Rajesh Tale (M. Sc., M. Tech., Ph.D.)
Sr. Lecturer

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Academic Background

M. Sc. Amravati University, Amravati.
(Organic Chemistry)

Ph. D. S. R. T. M. University, Nanded.
(Organoboron Chemistry)

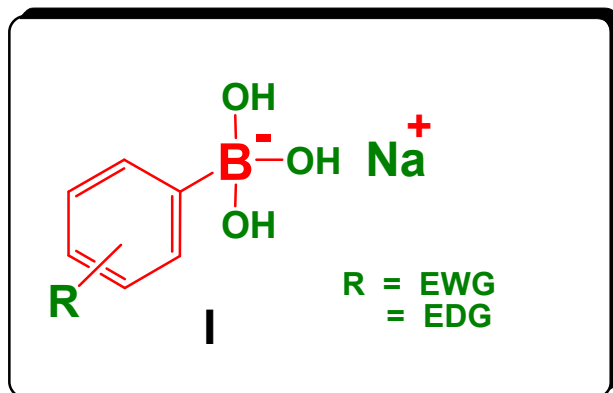
B. Sc. Amravati University, Amravati

M. Tech. Indian Institute of Technology,
New Delhi (Analytical Chemistry)

Research Interest

It is true that organic synthesis is largely responsible for the significant increase in life expectancy observed in modern societies over the past century. To further advance the significant role of organic synthesis in such an Endeavour, the development of organic reactions in terms of modern organic synthesis is an important goal of modern organic chemist.

Research in my laboratory encompasses a broad area of chemistry that include organoboron reagents such as boronic acids, boronic esters and diboron reagents as an efficient and environmentally benign cross-coupling reagents in the palladium catalyzed C-C and C-heteroatom bond forming reactions. Moreover, in the past few years our laboratory has been successful at exploiting some boronic acids as efficient, inexpensive and environmentally benign Lewis acid catalysts for the important organic transformations. Very recently, we have been engaged in the development and subsequent use of aryltrihydroxy borate salts [(Ar-B(OH)₃Na⁺], novel and conceptually simple organoboron reagents in the palladium catalysed cross-coupling reactions, particularly in Suzuki coupling reaction.



ARYLTRIHYDROXYBORATE SALTS:

Main Research Areas:

Palladium catalysed cross-coupling reactions involving organoboron reagents.

Organocatalysis with boronic acids

Boronic mannich reactions

Exploiting Boronic acids as Protecting Groups

Organoboron Chemistry Lab

Group Members



Selected publications

1. 3,4,5- Trifluorobenzeneboronic acid: a mild and versatile catalyst for the one-pot synthesis of acyl azides from carboxylic acids.
Tale, R. H.* and Patil, K. M. *Tetrahedron Letters*, 2002, 43, 9715.
2. An extremely simple, convenient and mild one-pot reduction of carboxylic acids to alcohols using 3,4,5- trifluorophenylboronic acid and sodium borohydride.
Tale, R. H.*; Dapurkar, S. E. *Tetrahedron Letters*, 2003, 44, 3427
3. Synthesis of symmetrical diaryl ethers from arylboronic acids mediated by copper(II) acetate.
Sagar, A. D.*; Tale, R. H. and Adude, R. N. *Tetrahedron Letters*, 2003, 44, 7061
4. 3-nitrobenzeneboronic acid as an efficient and environmentally benign catalyst for the selective trans esterification of β -keto esters.
Tale, R. H.*; Sagar, A. D.; Santan, H. D.; Adude, R. N. *Synlett*. 2006, 3, 415

- 5 **A novel 3-nitrobenzeneboronic acids as an extremely mild and an environmentally benign catalyst for the acetylation of alcohols under solvent free-conditions.**

Tale, R. H.* Adude, R. N. *Tetrahedron Lettesr.* **2006**, 47, 726

Book/Chapter Published

The chapter on *Boronic acids-(3-nitrophenyl-)* is accepted for publication in Electronic Encyclopedia of Reagents in Organic Synthesis (e-EROS) by John-Wiley Publication.