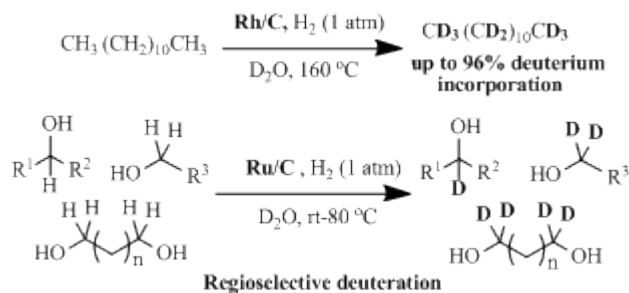


Multiple/regioselective H-D exchange reaction of aliphatic alkanes and alcohols

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While a H-D exchange reaction, which is a basic research subject related to the C-H activation, is a powerful tool to prepare deuterium labeled compounds, conventional H-D exchange reactions require harsh reaction conditions such as high temperature, high pressure, basic or acidic conditions. Therefore, it is desirable to develop an efficient and facile H-D exchange reaction under mild reaction conditions. We have recently developed the methods, which satisfies such demands, for the Pd/C-catalyzed deuteration of aromatic compounds, ketones and alcohols. During the course of the investigation, we found that Rh/C is an efficient catalyst for the C-H bond activation-based multiple H-D exchange reactions of non-activated alkanes at 160 °C under an H₂ atmosphere. In this meeting, we will present the detail of the deuteration together with a highly regioselective H-D exchange reaction at the α -position of primary and secondary aliphatic alcohols using a Ru/C-H₂-D₂O combination.



[New Reactions and Methodology](#)

1:00 PM-5:00 PM, Monday, August 17, 2009 Walter E. Washington Convention Center -- 204A/B, Oral

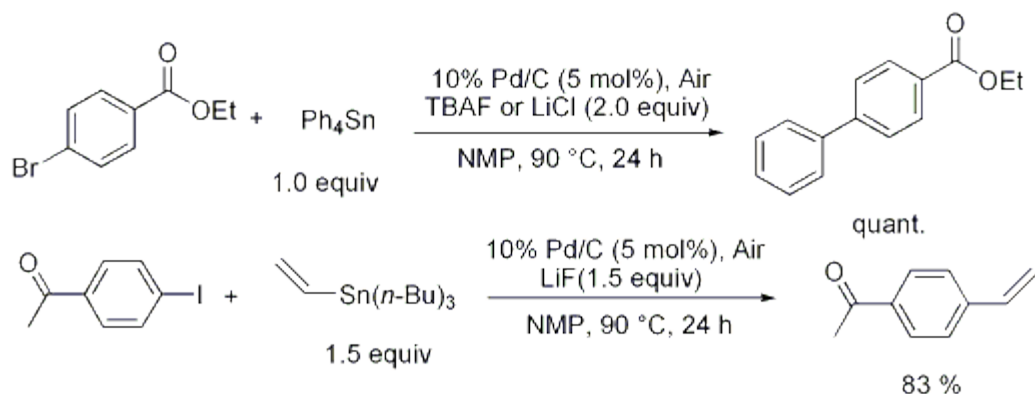
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[The 238th ACS National Meeting, Washington, DC, August 16-20, 2009](#)

Palladium on charcoal-catalyzed ligand free Stille coupling

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Stille reaction, a palladium catalysed cross-coupling between organotin reagents and organohalides, has widely been used for the synthesis of functional and bioactive materials including pharmaceuticals and agrochemicals. Palladium on charcoal (Pd/C) is a widely applicable, environmentally- and ecologically-friendly heterogeneous catalyst in various cross-coupling reactions due to an accessible, air stable, reusable, and non-residual property. When Pd/C was employed for the reaction of ethyl 4-bromobenzoate with tetraphenyltin (1.0 equiv) in hot NMP (90 °C) together with TBAF or LiCl, the corresponding coupled product, ethyl 4-phenylbenzoate, was quantitatively obtained. Furthermore, the cross-coupling reaction between 4-iodoacetophenone and organotributyltin derivatives were effectively promoted by the use of LiF instead of TBAF or LiCl. In this meeting, we will present the details of the efficient, heterogeneous, and ligand-free Stille coupling reaction using three kinds of combinations, Pd/C-TBAF, Pd/C-LiCl, and Pd/C-LiF, as a general methodology.



[New Reactions and Methodology, Physical Organic Chemistry, Molecular Recognition/Self Assembly and Proteins, Peptides and Amino Acids](#)

8:00 PM-10:00 PM, Tuesday, August 18, 2009 Walter E. Washington Convention Center -- Hall D, Poster

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