

## Dissertation Abstract

Report no.	(Course-based) No. 1033	Name	GHOLAP SANDEEP SURYABHAN
Dissertation title	Copper-Catalyzed Regioselective Alkylative Carboxylation of Allenamides with Alkylzinc Reagents and Carbon Dioxide (銅触媒を用いたアルキル亜鉛試薬と二酸化炭素によるアレナミドの位置選択的アルキル化およびカルボキシル化反応)		
<p>Abstract</p> <p>※ The abstract should be in keeping with the structure of the dissertation (objective, statement of problem, investigation, conclusion) and should convey the substance of the dissertation.</p> <p>Carbon dioxide, a green and sustainable resource defining new paradigm to synthesis of carboxylic acids is received increasing attention from both academia and industry. In principle, such reactions would be very efficient to synthesis of organic compound in efficient manner. Highlight of recent research is to find various substrates for carboxylation reaction via carbometalation reactions because such reactions offer formation of new multiple bonds through C-C bond formation with CO<sub>2</sub> in regioselective manner. This thesis is particularly focuses on potential substrate as allenamides having various N-heterocycles which offers, upon carboxylation, the various carboxylic acid derivatives containing N-heterocycles known as amino acid derivatives could be formed selectively.</p> <p>This thesis included, the new investigation of carboxylation of allenamides via carbometalation reactions using various less reactive mild alkali reagents such as dialkylzinc and functionalized alkylzinc halides in presence of catalytic amount of copper complexes in one pot. These mild reagents act as alkyl source to which upon reaction of allenamides offers perfect regioselectivity for carbon dioxide insertion through the co-ordination of copper complex with the N-carbamate moiety of allenamides. Such strategy offers a new direction to control the regioselectivity in product. Also the formation of two C-C bond in one catalytic system implies the importance of developed protocol to synthesis of functionalized carboxylic acids i.e. <math>\alpha,\beta</math>-dehydro-<math>\beta</math>-amino acid ester derivatives. These protocols could contribute the greener way towards the utilization of carbon dioxide.</p>			