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## Asymmetric Cu-catalyzed 1,2 and 1,4-additions of Grignard reagents

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*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*

2018

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Calvo Gonzalez, B. C. (2018). *Asymmetric Cu-catalyzed 1,2 and 1,4-additions of Grignard reagents: Development of new substrates and their application in total synthesis*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

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# **Asymmetric Cu-catalyzed 1,2 and 1,4-additions of Grignard reagents**

Development of new substrates and their application in  
 total synthesis

**PhD thesis**

to obtain the degree of PhD at the  
 University of Groningen  
 on the authority of the  
 Rector Magnificus Prof. E. Sterken  
 and in accordance with  
 the decision by the College of Deans.

This thesis will be defended in public on

Friday 7 September 2018 at 09.00 hours

by

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