

ITI HiFunMat Conference registration

Event date: 21 April 2022

Event address: ECPM, Campus Cronenbourg, Strasbourg

Registration deadline: 07 Mars 2022

Contact us at: melodie.galerie@unistra.fr

Name, First Name	Hansjacob, Pierre
E-mail address	pierre.hansjacob@etu.unistra.fr
Laboratory	LIMA, Strasbourg

Thematic HiFunMat research axis affiliation?	
Axis 1: Design and synthesis of elementary molecular building blocks	Yes
Axis 2: Development of finely controlled surfaces to obtain adaptable and reversible properties	
Axis 3: Development of hierarchically structured materials, with fine control at different scales	
Axis 4: Development of new strategies for shaping, modifying and characterizing materials by various types of radiation	
Axis 5: Design of new biomimetic, biodegradable, active, self-healing, responsive, life-like materials	

Would you wish to present a poster?	Yes
Would you wish to present a short communication? *	

* If you wish to present a short communication, please send to us the abstract using the template file (attachment)

Pd-Catalyzed Silylcyanation of Ynamides: Regio- and Stereoselective Access to Tetrasubstituted 3-Silyl-2-Aminoacrylonitriles

Pierre Hansjacob¹, Frédéric Leroux¹, Vincent Gandon^{*2,3}, Morgan Donnard^{*1}

¹Université de Strasbourg, UHA, CNRS, UMR 7042, LIMA, ECPM, Strasbourg, France;

²Université Paris-Saclay, CNRS, UMR 8182, ICMMO, Orsay, France;

³Ecole Polytechnique, Institut Polytechnique de Paris, CNRS, UMR 9168, LCM, Palaiseau, France
(vincent.gandon@universite-paris-saclay.fr ; donnard@unistra.fr)

Enamines as well as acrylonitriles are valuable building blocks in organic chemistry. However, the synthesis of scaffolds merging both functionalities namely aminoacrylonitriles are particularly difficult¹. In 1985, Chatani and co-workers published a palladium-catalyzed addition of trimethylsilyl cyanide on terminal alkynes to provide cyano-substituted vinylsilanes in good to high yields with high regio- and stereoselectivity². In this communication we will introduce how we took advantage of specific polarized alkynes (i.e. ynamides) to produce efficiently polyfunctionalized tetrasubstituted olefins, so-called 2-aminoacrylonitrile derivatives, in a stereo and regio-selective manner. DFT investigations allowed us to explain the divergence of stereoselectivity observed experimentally according to the substitution of the alkyne. These unique building blocks are particularly interesting as they can undergo a broad range of post-functionalization reactions such as vinylsilane, nitrile and enamine chemistry³.

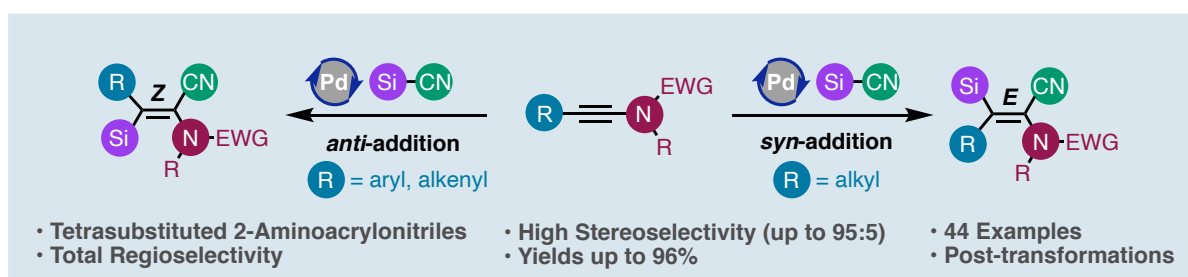


Figure 1: Pd-Catalyzed Silylcyanation of ynamides

References

- 1-a) Chatani, N.; Hanafusa, T. *J. Chem. Soc. Chem. Commun.* 1985, 12, 838-839; b) Chatani, N.; Takeyasu, T.; Horiuchi, N.; Hanafusa, T. *J. Org. Chem.* 1988, 53, 3539-3548
 2-a) Chatani, N.; Hanafusa, T. *J. Chem. Soc. Chem. Commun.* 1985, 12, 838-839; b) Chatani, N.; Takeyasu, T.; Horiuchi, N.; Hanafusa, T. *J. Org. Chem.* 1988, 53, 3539-3548.
 3-Hansjacob, P.; Leroux, F. R.; Gandon, V.; Donnard, M. *Angew. Chem. Int. Ed.* **2022**, 61, e202200204.