



*VABILO NA PREDAVANJE  
V OKVIRU DOKTORSKEGA ŠTUDIJA  
KEMIJSKE ZNANOSTI*

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z naslovom:

**Improving Efficiency via Catalytic and  
Multicatalytic Reactions**

**v ponedeljek, 4. septembra 2017 ob 12:00 uri**  
v predavalnici 2 v 1. nadstropju Fakultete  
za kemijo in kemijsko tehnologijo, Večna pot 113

*Vljudno vabljeni!*



## Abstract:

Oxidative addition and reductive elimination are two fundamental steps common to many different catalytic reactions. Insertion into C-X bonds is particularly prevalent as one of the first steps in a catalytic cycle.

We have been exploring the synthetic potential associated with reversible oxidative addition into carbon-halogen bond and recently developed a palladium catalyzed carboiodination reaction.<sup>1</sup> This lecture will describe the scope and limitations of the reaction including recent work that has expanded the scope.<sup>2-3</sup>

We have also been exploring the value of combining catalysts and substrates in a multicomponent multicatalyst strategy (MC)<sup>2</sup>R.<sup>4</sup> Recent advances will be presented.

C-H functionalization remains one of the most active areas of research.<sup>5</sup> We will present our recent working in this field.

## References

1. Newman, S.G.; Lautens, M. *Journal of the American Chemical Society* **2011**, *133*, 1778-1780.
2. Petrone, D.A.; Le, C.; Newman, S.G.; Lautens, M. *New Trends in Cross Coupling: Theory and Applications*, RSC, Colacot, T. Ed. 2014.
3. Le, C.M.; Hou, X.; Sperger, T.; Schoenebeck, F.; Lautens, M. "An Exclusively *trans*-Selective Chlorocarbonylation of Alkynes Enabled by a Palladium/Phosphaadamantane Catalyst" *Angewandte Chemie International Edition* **2015**, *54*, 15879-15900.
4. Panteleev, J.; Zhang, L.; Lautens, M. "Domino Rhodium-Catalyzed Alkyne Arylation/Palladium Catalyzed N Arylation: A Mechanistic Approach" *Angewandte Chemie International Edition* **2011**, *48*, 9089-9092.
5. Ye, J.; Lautens, M. "Palladium Catalyzed Norbornene Mediated C-H Functionalization of Arenes" *Nature Chemistry* **2015**, *7*, 863-870.