



Secteur des Sciences  
et Technologies

Invitation à la soutenance publique de thèse de  
**Mathilde QUERTENMONT**

Master en Sciences chimiques à finalité spécialisée

Pour l'obtention du grade de Docteur en sciences

« Organic Electrochemistry Applied to the Kolbe Anodic Cyclization  
of Functionalized 2-Pyrrolidinones »

qui se déroulera  
le mardi 10 novembre 2020 à 16h  
en visioconférence  
1348 Louvain-la-Neuve

#### Jury members :

Prof. Olivier Riant (UCLouvain), supervisor  
Prof. Jean-François Gohy (UCLouvain), chairperson  
Prof. Benjamin Elias (UCLouvain), secretary  
Prof. Raphaël Robiette (UCLouvain)  
Prof. Laurence Grimaud (Ecole Normale Supérieure, France)  
Dr. Kevin Lam (University of Greenwich, UK)  
Prof. Christian Stevens (Ghent University, Belgium)



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The nootropic compounds are a group of pharmacologically active 2-pyrrolidinones. These molecules, enhancing cognition properties and possessing a large prescription field, are particularly interesting synthetic targets for the pharmaceutical industry.

We envision the development of a novel pyrrolidinone synthesis by organic electrochemistry, using the mixed Kolbe electrolysis as our key-step. Our methodology is derived from the five- and six-membered-ring compounds synthesis developed previously in the research group of the prof. István Markó. The electrochemically based cyclization strategy includes a Kolbe decarboxylation, followed by an intramolecular radical cyclization and a radical-radical cross-coupling.

Electrochemistry has been chosen since this technology is environmentally friendly, relatively inexpensive and easily transposed to batch reactors and continuous-flow systems. This synthesis would be an original and innovative approach to form therapeutically active molecules.