



Secteur des Sciences  
et Technologies

Invitation à la soutenance publique de thèse de  
Guillaume DOLPHIJN  
Master en Sciences chimiques à finalité approfondie

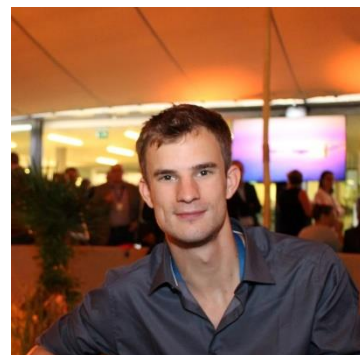
Pour l'obtention du grade de Docteur en sciences

« Development of high power hybrid cathodes for lithium ion  
batteries »

qui se déroulera  
le vendredi 13 mars 2020 à 11h  
Auditoire BARB 93  
Place Sainte Barbe  
1348 Louvain-la-Neuve

#### Jury members :

Prof. Jean-François Gohy (UCLouvain), supervisor  
Prof. Alexandru Vlad (UCLouvain), supervisor  
Prof. Arnaud Delcorte (UCLouvain), chairperson  
Prof. Yaroslav Filinchuk (UCLouvain), secretary  
Prof. Tom Leyssens (UCLouvain)  
Ir. Fernand Gauthy (Solvay, Belgium)  
Dr. Matthieu Beluwe (LRSC, France)



 UCLouvain

Energy storage is becoming a critical challenge for our society. Among the existing storage technologies, lithium ion batteries are getting the most attention and have progressed the furthest. This success has been made possible through huge R&I efforts from academic and industrial actors to produce affordable LIB with high energy densities, decent power performances, and long cycle life.

Even though this technology has widespread in the portable electronics sector, its mass adoption in electric vehicles or grid storage equipment requires further improvements.

In order to improve the power and the cycle life performances, we have studied a new hybrid cathode concept developed in the laboratory of Prof. J-F Gohy.

The hybrid cathode is blended with a polymeric redox material acting as a power buffer and with common inorganic materials presenting a high energy density. This concept published in 2014 attracted the attention of Solvay and a collaborative thesis, funded by the Brussels region, was settled in 2016. The objective was to evaluate the possibility to bring this innovation from the lab towards the industry.