

Secteur des Sciences et Technologies

Invitation à la soutenance publique de thèse de Jiande WANG Masterdegree of Engineering

Pour l'obtention du grade de Docteur en sciences

« High voltage organic positive electrode materials for alkali-ion batteries »

qui se déroulera le mercredi 27 octobre 2021 à 13h Auditoire MERC12 Place Louis Pasteur, 3 1348 Louvain-la-Neuve et en visioconférence

## Jury members:

Prof. Alexandru Vlad (UCLouvain), supervisor Prof. Yann Garcia (UCLouvain), chairperson Prof. Yaroslav Filinchuk (UCLouvain), secretary Prof. Jun Chen (Nankai University, China) Prof. Jilei Liu (Hunan University, China) Prof. Philippe Poizot (University of Nantes, France) Prof. Jean-François Gohy (UCLouvain)



The quest for green and sustainable energy storage systems has brought about the need for a material system that can satisfy the following requirements: low cost of production, environmental benignity, flexibility, redox stability, renewability and structural diversity. Interestingly, organic batteries have been identified as potential candidates to proffer solutions to the above-mentioned challenges.

One of the major challenges of organic battery is the lack of suitable positive electrode materials that can fulfil the requirements of conventional Li-ion batteries: Li-containing and air-stable. The thesis mainly developed two new organic Li-ion cathode chemistries, which are the conjugated sulfonamides and the conjugated oximates. The proposed organic cathode chemistries show high redox potential (> 3V vs. Li<sup>+</sup>/Li), good air-stability (oxygen and moisture stable), as well as excellent cycling performance as positive electrode materials in Li-ion batteries.

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