



Secteur des Sciences
et Technologies

Invitation à la soutenance publique de thèse de

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Master Recherche (M2) " Chimie-Biologie des Molécules Bioactives

Pour l'obtention du grade de Docteur en sciences

« Synthesis and characterization of redox-responsive hydrogels
based on stable nitroxide radicals »

qui se déroulera
le vendredi 03 juillet 2020 à 14h
Par visioconférence
1348 Louvain-la-Neuve

Jury members:

Prof. Jean-François Gohy (UCLouvain), supervisor
Prof. Antoun Sayed (ULibanaise, Lebanon), supervisor
Prof. Yann Garcia (UCLouvain), chairperson
Prof. Evelyne Van Ruymbeke (UCLouvain), secretary
Prof. Charles-André Fustin (UCLouvain)
Prof. Christine Jérôme (ULiège, Belgium)
Prof. Patrice Woisel (ULille, France)



Stimuli-responsive hydrogels have the unique property of undergoing a phase transition. This property has attracted much interest for their application in the field of medicine and biotechnology. Aqueous solutions of linear polymers of the poly(N-substituted acrylamides), poly(ethylene glycol methacrylates) families and their three-dimensional macroscopic (hydrogels) or microscopic (nano- and microgels) networks demonstrate such a phase transition behavior. In particular, polymers of this family have the ability to respond to temperature and are characterized by a lower critical solution temperature (LCST). Moreover, redox-responsive polymers such as those based on 2,2,6,6-tetramethyl-1-piperidinyloxy-methacrylate (TEMPO), also gained a lot of attention in recent years. The aim of the present thesis is the synthesis and characterisation of stimuli-responsive hydrogels prepared from the above-mentioned polymers. The effect of both redox and temperature stimuli on the mechanical and electrochemical characteristics of these hydrogels is studied and their possible application for the precise encapsulation/release of guest molecules and as catalytic scaffolds for alcohol oxidation is demonstrated.