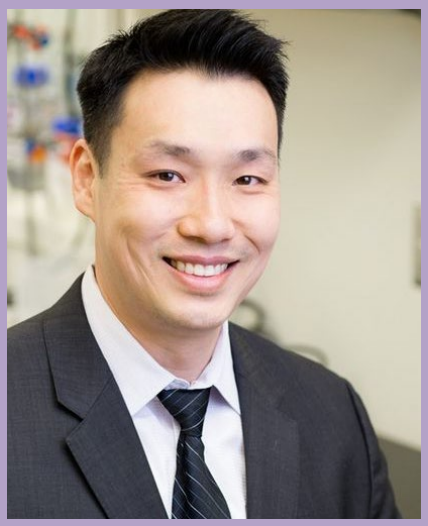
CONFÉRENCES DE CHIMIE
Automne 2020



Professeur Jefferson Chan, UIC
UNIVERSITY OF ILLINOIS

7 octobre 2020
À 11 h 00
En ligne

Lien Zoom
ID de réunion : 974 3724 3200
Code secret : 071020

> BIENVENUE À TOUS !

Expanding the Chemical Toolbox for Acoustic-based Imaging of Cancer

Many disease states are characterized by molecular level changes that occur before detectable symptoms have begun to manifest. In order to maximize treatment outcomes it is essential to accurately detect such alterations at an early stage. Chemical probes designed to selectively image such molecular processes have the potential to not only aid in disease diagnosis but can also provide unique insights into disease progression. As an important step toward these goals we have developed a palette of activatable probes for photoacoustic imaging and apply these to visualize changes in the tumor microenvironment. Briefly, photoacoustic imaging is a state-of-the-art technique that generates ultrasound signals from light, which can be detected and converted into high-resolution 3D images. Since sound scattering is three orders of magnitude less than light in tissue, photoacoustic imaging can be employed to image up to 8 cm in depth while achieving micron resolution. To image deeper regions of the body in real-time, we have recently developed the first activatable 'smart bubbles' for ultrasound imaging. Like our photoacoustic probes, smart bubbles respond selectively to a disease property to provide signal enhancements via enhancement of their echogenic properties. In this seminar, we will discuss the strategies employed to construct both photoacoustic and ultrasound probes, as well as highlight notable examples from our laboratory.

Faculté des arts et des sciences — Département de chimie

Merci à nos commanditaires

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