

# Séminaire d'Andréea PASC

Professeure au Laboratoire Lorrain de Chimie Moléculaire

(L2CM UL-CNRS, UMR 7053)

Vendredi 28 janvier 2022 à 14h00

Par TEAMS :

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_NzY0YmRmZjMtOWU1NS00MzVhLWJkY2ItNmRINDRjZmRkNjhm%40thread.v2/0?context=%7b%22Tid%22%3a%22158716cf-46b9-48ca-8c49-c7bb67e575f3%22%2c%22Oid%22%3a%2232598aa2-af1d-4b33-aedf-bd5e0a33bb6b%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NzY0YmRmZjMtOWU1NS00MzVhLWJkY2ItNmRINDRjZmRkNjhm%40thread.v2/0?context=%7b%22Tid%22%3a%22158716cf-46b9-48ca-8c49-c7bb67e575f3%22%2c%22Oid%22%3a%2232598aa2-af1d-4b33-aedf-bd5e0a33bb6b%22%7d)

## Photothermal Molecules and Nanoparticles

Among photo-assisted therapies and beyond photodynamic therapy (PDT), photothermal therapy (PTT) is a relatively novel explored strategy based on local hyperthermia aiming anticancer or anti infectious potential applications. Compared to other therapies, PTT is highly selective and exhibits low side effects. This is due to the fact that the heat is localized, under the controlled illumination of the desired site and in the presence of the photothermic agent.

Both nanoparticles and molecular probes may exhibit photothermal properties, by illumination in the optic therapeutic window, under mono or biphotonic excitation. Some recent examples developed in L2CM will be presented, from inorganic to organic particles to molecular biphotonic fluorophores or photoswitches.

The impact of the molecular design on the photothermal properties and consequently on phototoxicity will be highlighted, e.g. for calixarene-derived MoS<sub>2</sub> nanoparticle and indocyanine green aggregates as well as two-photon absorbing stilbene-derived fluorophores.

Séminaire organisé par le Département Nanomatériaux, Electronique et Vivant de l'IJL.