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# NaDES for biomass valorization: new insight of a green technology

## CONVENORS

**Dr Duangjai Tungmunthum**

2021-2022 LE STUDIUM RESEARCH  
FELLOW / ARD CVL COSMETOSCIENCES  
PROGRAMME

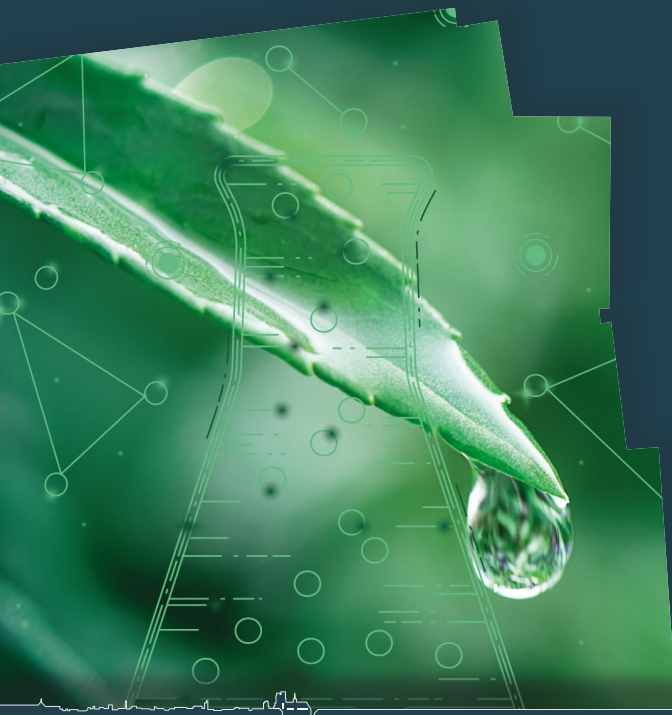
Mahidol University - TH

**Dr Christophe Hano**

Laboratory of Woody Plants and Crops Biology  
(LBLGC) / INRAe, University of Orléans - FR

**Prof. Leslie Boudesocque-Delaye**

Synthesis and Isolation of Bioactive Molecules  
(SIMBA), University of Tours - FR



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## Dr Erwann Durand

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I received a multidisciplinary formation in organic and analytical chemistry. My expertise and research interests are focused to implement new antioxidant strategies for preserving oxidation of lipid-based formulation products. I am doing my researches in the context of green chemistry, with the willingness to design less harmful processes using mild conditions and renewable resources, they encompass the extraction of bioactive molecules (phenolic compounds, lipids, proteins, etc.) from biomass, along with their purification, (bio)transformation and characterization. In this context, I went to investigate for many years the Natural Deep Eutectic Solvents in different research areas (extraction, biocatalysis, formulation, etc.). I have authored 55 publications in peer-reviewed scientific journals, 3 book chapters, and gave about 40 communications at international conferences. My H-index is 17 and, combined together, my articles have been cited 1600 times (source: Scopus).

### NaDES (Natural Deep Eutectic Solvents): a new approach inspired by nature to promote the biomass (bio)transformation.

Natural Deep Eutectic Solvents (NaDES) are liquid mixtures resulting from the association of metabolites such as sugars, organic acids, amino acids, polyols or vitamins. The singularity of NaDES, compared to all the other conventionally encountered solvents, remains in the biological and physiological roles that these mixtures could have in living organisms. Although the presence of NaDES in cells has not yet been demonstrated, we present how these liquid phases could form in-situ and contribute to the cellular functions of living organisms. In the era of green chemistry, NaDES is therefore of particular interest for developing more efficient and sustainable processes in the fields of food industries. Through this talk, we want to show how an approach based on the concept of biomimicry thanks to NaDES could respond to the challenges of transformation (especially using enzymes) and sustainable use of biomass, and open up great eco-innovative opportunities.