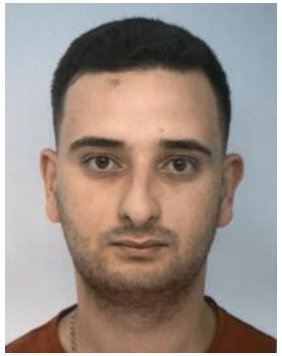
Integrating the damping and nonlinear behavior of plant-fiber composites into the design of structures for high-performance applications

Supervisory team : Morvan OUISSE, Pauline BUTAUD, Vincent PLACET

BELAHCEN Mohamed Amine
start in oct. 2024



Objectives :

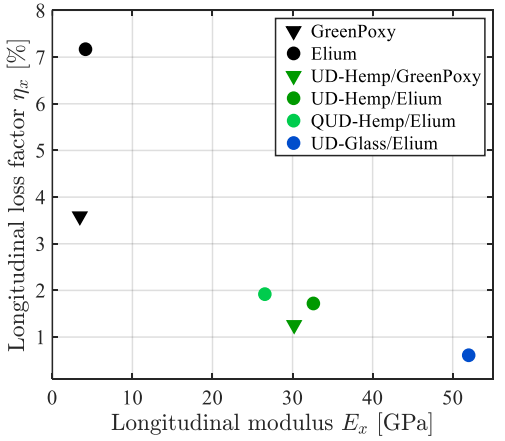
- Improving structural damping and the stiffness-to-damping compromise of bio-based composites
- Considering material damping and nonlinear behavior in the design of structures such as wind turbine blades

Research Question :

How can the properties of newly developed constituents influence and improve the behavior of complex structures ?

Methodological Approach

- Development of an identification methodology for the simultaneous characterization of damping and elastic properties at both the material and structural scales.
- Investigation of damping mechanisms and nonlinear behavior at both the material and structural levels.



Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union