

## Séminaire

**mardi 15 octobre 2024 à 10h30**  
**Amphithéâtre Henri Benoît**

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## **Impact of *Hevea brasiliensis* latex rubber particle size on fluid interface and dry rubber sheet properties**

The aim of this seminar is to present the results obtained on the coagulation process of two size classes of rubber particles extracted from *Hevea brasiliensis* latex, and to establish a link between this process and the mechanical properties of the rubber obtained. The originality of the study lies in its multi-scale and multidisciplinary approach, involving both the analysis of native particles and their self-organization in the liquid state, and the mechanical characterization of dry rubber sheets. This research focused on two particle sizes from RRIM600 clones.

Firstly, the particles were characterized at the liquid/air interface using a Langmuir trough and the kinetics of adsorption and film formation of the rubber particles at the interface were followed by complementary techniques such as ellipsometry, tensiometry, interfacial rheology and Brewster angle microscopy. These methods enabled us to observe the initial stages of coagulation and the organization of particle components, subsequently analyzed by atomic force microscopy. Secondly, the interfacial study was linked to the mechanical properties of rubber in its solid form, through uniaxial tensile tests on rubber sheets formed from both particle sizes. This work opens up new prospects for future research in this field by linking molecular processes to the macroscopic mechanical behavior of natural rubber.

Les personnes souhaitant rencontrer M. Baudouin sont priées de prendre contact avec Wiebke Drenckhan.