

Master 2 Internship offer on “Nano-indentation modeling of an elastomer at various temperatures”

One Master 2 internship offer is available in the Elastomer Research Center (Cermel), in the Mechanics, Materials & Processes team of the LaMé laboratory (EA 7494), in the Polytechnic School of the University of Tours in France.

Internship description

The global mechanical behavior of an elastomer is quite complex. It has a non linear response in large strains while dissipating energy with a strong dependency to strain rate, temperature and environment. This makes it difficult to model due to a large number of involved parameters.

The proposed subject will aim to study the local behavior by nano-indentation of one elastomer versus its temperature. The main objective of this internship is to model the nano-indentation process with prescribed high temperatures by finite element method in order to latter build a reduced-order model for material properties identification purposes. The M2 student is expected to carry out theoretical and also experimental work for comparison and validation of the numerical model.

The internship will last 6 months. The candidate will join a dynamic research team with a research focus on elastomers. Good teamwork and communication skills are essential. The applicant should be fluent in English (spoken and written), familiar with writing reports and giving presentations in English.

Motivated and ambitious students with excellent grades and the following backgrounds or experiences are encouraged to apply:

- Bachelor of Science in engineering, math or physics;
- Computer programming, finite elements, applied mechanics;
- Instrumented indentation, AFM, SEM, EBSD.

Duration: 25 weeks; Incomes: about 500€/month.

Contact

For further details or application, please contact **Guenhael Le Quilliec** and **Florian Lacroix**, e-mail: elastomer.internship2018@univ-tours.fr

Applications with a cover letter, CV and a reference letter should be submitted electronically. Any other document you consider relevant may also be submitted.