# Postdoc position in Deep Learning / AI

Pollen Metrology is a deeptech company specialized in the creation of intelligent software for the production of high-performance materials. Pollen has developed a unique artificial intelligence framework that interfaces with the most advanced **machine learning** techniques. This unique technology allows the **analysis** of data flows necessary for the development and production to automatically analyze images from electron microscopes.
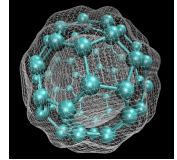
To launch a new range of products, worldwide, Pollen is recruiting new collaborators to strengthen its research team working on semiconductor industry applications. You will be attached to the research/algorithms team, a multidisciplinary team (metrology, physics, computer science, image processing, deep learning, data fusion) based in our headquarters in Moirans, France.

Your missions

The CLEDIA project is a partnership between Pollen, a Mathematics Laboratory, and an integrated device manufacturer. The project consists in the development of a new Artificial Intelligence (**AI**) module to combine metrology and process optimization. The process itself is deployed on the pilot line of the industrial partner of this project.

Your **main tasks** will be to manage:

- identification of the parameter vector definition domain
- the study of the properties of the function: convexity, differentiability, Lipschitz constants etc.
- the determination of the scale and distribution of noise in the measurements
- the choice of the model and the identification of its parameters.
- the implementation of at least 3 different models to be benchmarked.

These newly developed modules will enrich our software that contributes to enhance the semiconductor industry research and production and by doing so you will indirectly participate in the creation of the next generation of computer and electronic devices.

You will be in charge of proposing, prototyping and **developing Deep learning algorithms** for **process optimisation** to **combine metrological and process data** of various types.

You will use frameworks such as TensorFlow or PyTorch, and internal technologies that you will help to develop. You will publish your key results in semiconductor domain conferences.

Required skills

- Very good knowledge of **deep learning**.
- Good knowledge of **optimization** methods.
- Good knowledge of **statistics**.
- Good knowledge of **Python** (TensorFlow or PyTorch, scikit-learn, etc).
- Knowledge in **image processing**.
- Fluency in English.
- You are eager to learn.

Calendar

The project is designed to last 30 months. The mission covers the whole duration of the project.

The starting date is spring 2021.

Environment

- This work will be carried out under the joint direction of Pollen Metrology and the University Grenoble Alpes, in order to favour approaches at the cutting edge of innovation. The partner laboratory is the mathematics laboratory LJK (Laboratoire Jean Kuntzmann).
- You will be located in the company, you will join a growing company driven by team spirit, the desire to provide high quality software that includes cutting-edge technology. At the term of the contrat, the position could be converted into a permanent position.

Send your application to jobs@pollen-metrology.com