

# POST-DOC POSITION on Ultrasonic Surface Waves

**Organisation:** Geophysics and Non Destructive Laboratory, Ifsttar, France ([www.ifsttar.fr](http://www.ifsttar.fr))

**Location:** Nantes, France

**Research Field:** Ultrasonics, Acoustics, Waves

**Type of contract:** Temporary **Job Status:** Full-time

**Duration:** 12 months **Monthly gross salary:** 2699.63 €

**Application deadline:**

**The position is immediately available.**

**Contact:** [odile.abraham@ifsttar.fr](mailto:odile.abraham@ifsttar.fr)

## Your tasks

We are looking for a highly motivated post-doc to take up a position on ultrasonic surface waves for the Non Destructive Evaluation (NDE) of a very heterogeneous material, concrete. You will work on a project funded by the French National Research Agency (ANR) within the framework of a consortium dealing with the safety of concrete nuclear containment wall (PIA-ANR-ENDE and PIA-ANR-MACENA).

Your first goal will be to optimise and validate in the laboratory an original experimental device under development at Ifsttar that uses multiple sources and multiple receivers to recover ultrasonic surface waves coherent field.

Your second objective will be to link this experimental device to recent in-house developments on surface waves dispersion curves forward modelling and inversion to recover intrinsic properties of very heterogeneous material. This task requires a survey of our codes in order to reshape and integrate them in a robust and reliable framework based on one hand on the physics of surface waves propagation and on the second hand on the precision requested. The programming environment for the integration work will be Python.

The third task will be to carry out experiments on an outstanding test facility owned by Electricité de France (EDF), the Vercors mock-up, to process the signals and to confront your results with data coming from embedded sensors as well as information provided by other non destructive measurements collected by partners.

At the end of your post-doc a surface waves NDE experimental device associated with a

robust measurement and interpretation methodology, validated on a full scale specimen, will be made available to practitioners involved in the non destructive evaluation of concrete in general and nuclear containment wall in particular. This post-doc will be the occasion to built and show a broad scale of expertise and to work with researchers involved in the whole chain of ultrasonic innovation.

You will be expected to publish scholarly papers and attend an international conference.

## Your profile

You must hold a PhD in Acoustics or related to the physics of waves.

Moreover, experience on the following will be highly beneficial :

- surface waves
- ultrasonic experiments
- numerical modelling
- signal processing

Knowledge of English (oral and written) is mandatory and knowledge of French would be an advantage.

## Application procedure

Please submit your application by email (titled : ENDE - Post-Doc application - Your Name) to [odile.abraham@ifstar.fr](mailto:odile.abraham@ifstar.fr) including a letter of motivation, CV, a list of publications and names and addresses of two academic references.

Any other way of applying will not be considered.

Include in your email :

- **Full Name:** First name LAST NAME
- **Citizenship:**
- **Date of Birth:**
- **Gender:**
- **Email:**
- **Motivation:** provide up to **three** factual (if possible quantitative) arguments that demonstrate the pertinence of your research expertise
- **Number of journal publications and DOI**
- **CV (.pdf)**
- **Motivation letter (.pdf)**
- **Supporting documents** (e.g. paper, list of publications, awards) (.pdf)