



ParisTech

# École Nationale Supérieure de Chimie de Paris

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[www.chimie-paristech.fr](http://www.chimie-paristech.fr)

Post-doctoral position available

## Using Dynamic Mean Field Simulations to Characterize Ebullition in Porous Networks with Complex Topology

### Project

The deposition of corrosion products in the vapor generators of pressurized water reactors has a negative impact on ebullition in the secondary circuit. Confinement effects might lead to changes in the boiling point of water, or the dynamics of the phase change itself. Moreover, the dynamics of newly-formed vapor bubbles is also affected. A partnership between EDF, CNRS and Chimie ParisTech (Laboratoire d'Électrochimie, Chimie des Interfaces et Modélisation pour l'Énergie) aims at evaluating the impact of porous metal oxide deposits on water ebullition. This included an experimental study of liquid-vapor transition dynamics in ordered porous networks, concluded in 2011.

The post-doctoral position now available is focused on improving our theoretical understanding of the influence of the nature of the porous network on the thermodynamics and dynamics of liquid-vapor transition. Aspects of chemical nature, geometry and topology of the porous networks will be the main factors studied, using simulations on a lattice-based model in the Dynamic Mean Field approach. The post-doctoral researcher will have to implement the simulation code.

### Location

Chimie ParisTech is a major French and internationally recognised college of Chemical Engineering, part of ParisTech (Paris Institute of Technology), with a long tradition in teaching and research excellence. It is located in the center of Paris, at the heart of the "Quartier Latin", the lively and cultural university district.

### Candidates

Applicants should have a PhD in Physical Chemistry or Materials Science with experience in writing numerical simulation codes. An experience in the development of lattice-based statistical physics models or atomistic molecular simulation is required.

### Position details

The position offered is part of an EDF/CNRS/Chimie ParisTech collaboration project. The post-doctoral researcher will be employed by CNRS and work at Chimie ParisTech, in the Molecular Simulation group. The position is for 12 months, and the monthly net salary before taxes is 1700–2000 € (depending on experience).

### Application process

Provide your CV, a list of publications, a statement of interest and the names of two referees you worked with, by e-mail to the address below.

### Contact

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