



Department of Atmospheric Sciences and Environmental Engineering

POST DOCTORAL POSITION

Topic: Physico-chemistry of PM_{2.5} and ultrafines from biomass combustion.

Context and objectives: A post-doctoral researcher position is available at the Department of Atmospheric Sciences and Environmental Engineering, Mines Douai (France). This is a full-time, 9-month term position, to be fulfilled as soon as possible, ideally by May 2014. The applicants must be an European Union citizen.

The postdoctoral researcher will be involved in the current projects on the physico-chemical characterization of PM_{2.5} and ultrafine particles from industrial biomass combustion processes. The main objective is to improve the understanding of the formation of fine and ultrafine particles in wood-fired industrial boilers, in order to reduce emission of particulate pollutants at the source. This initiative is carried out in conjunction with Leroux et Lotz Technologies (manufacturer), Veolia Environment Research and Innovation (R&D center) and the Risk Management and Environment Laboratory (LGRE, Mulhouse University, France). Investigations and sample collection have already been performed at three different wood boilers using distinct combustion systems (moving grate, spreader-stoker) and thermal outputs ranging from 0.5 to 25 MWth. In addition, controlled experiments have been carried out in a laboratory reactor. Samples of particulate matter have been chemically analysed for major species.

The selected candidate will be responsible for:

- the thorough analysis of the collected particle samples using bulk (ICP-MS, XRF, laser diffraction), mineralogical (XRD), surface (B.E.T., XPS) and microscopic techniques (SEM-EDS, TEM);
- manage collected data and carry out statistical analyses;
- interpret the data;
- communicate and publish on project results.

Advanced writing skills in English required.

French or European car driving licence is mandatory.

Key words: particles, combustion, biomass, chemical analysis

Funding: approx. 2200 Euros/month.

Location: Douai (35 km from Lille)

Beginning: April - May 2014

Ending: December 2014 (8-9 months)

Contact:

Dr. Esperanza PERDRIX

École des Mines de Douai

941, rue Charles Bourseul, 59508 Douai Cedex, France

Tel. +33(0)3 27 71 26 15 - E-mail: esperanza.perdrix@mines-douai.fr