



Incineration study of nano materials – support to safe-by-design products.

A post-doctoral position for 24 months is available at INERIS (Verneuil-en-Halatte) and CEA-PNS (Grenoble).

Postdoctoral position – 24 months

Starting date: Ideally January 1st 2017

Lab: CEA (M0 to M7-7 months) and INERIS (M8 to M24-17 months)

Context:

The development of Safer-by-Design NanoMaterials (NMs) is a growing approach, taking into account all the life-cycle of the NPs (synthesis, use and end of life phases). The proposed study will be focused on a common way of end of life: the incineration process.

Aim of the Project:

The aim of this project is to study the incineration behavior of different formulation of NMs in order to provide guidelines for designing low emission NMs when submitted to incineration.

To do so, a partnership will be conducted in close relation with two on-going projects developing nano-products in the field of paints/coatings and food packaging. The project will support the development of these NMs and will contribute to the global understanding of their incineration by considering influencing parameters e.g. NPs load factor, NPs shape and dispersion and thermal properties of the surrounding matrix.

The approach will be divided in three parts:

- 1- Characterization of NMs including thermal study by ATG-DSC and thermal degradation at high temperature in a lab-scale furnace. This part will be conducted at CEA Grenoble during 7 months.
- 2 -Incineration of NMs with an incineration dedicated pilot. This part will be carried out at INERIS during 17 months.
- 3 -All along the project, interaction with chemist partners will allow to develop new safer by design NMs, taking into account our feed-back.

Required skills:

A good knowledge of (nano)materials, of characterization techniques and aerosol metrology is asked.

Finally, recommendation letters are strongly recommended.

Contacts

olivier.le-bihan@ineris.fr

delphine.boutry@cea.fr

