

Early Stage Researcher Fellowship / PhD studentship – Marie Curie Initial Training Network – IPROCOCOM

### **Finite element modeling of forming process: application to roll compaction**

**Monthly salary ≈ 2875 € (gross), equivalent to 2340 € (net)**

**3 years, to start immediately!**

#### **The context and research field:**

The PhD position is funded by the European Community Programme “Marie-Curie”, and will be carried out in the framework of the larger programme IPROCOCOM.

IPROCOCOM (The Development of in silico process models for roll compaction) is a multidisciplinary and inter-sectorial consortium aiming to develop robust modeling of forming processes, such as die and roll compaction in different industrial sectors. This programme provides structured training for 15 researchers within a collaborative research network involving 10 full partners and 4 associate partners from 8 EU countries.

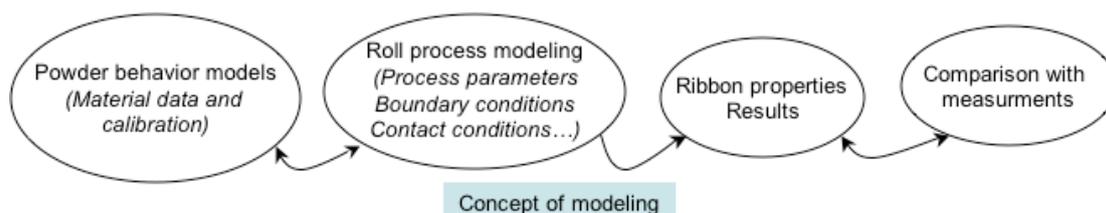
You will join the RAPSODEE, centre of Excellence for Research in Particulate Solids, Energy and Environment of the Graduate School of Engineering « [Ecole des Mines](#) » in Albi (France), full partner of the IPROCOCOM consortium (FP7-PEOPLE-2012-ITN European Commission Programme).

We develop research in finite element modeling of particulate solids and forming processes including die and roll compaction. The industrial sectors concerned by our research are the metallic, pharmaceutical, mineral and food industries.

#### **The position:**

### **Finite element modeling of forming process: application to roll compaction**

For this Fellowship, the PhD student will aim at developing predictive models for roll compaction process using the finite element method (FEM), which can be used to identify the critical material properties and process parameters controlling the quality of product. As there are different scales and designs of equipment (roll press), used by other partners, we will investigate the ability of the model to predict the properties of product in these configurations. Results from others PhD students within the IPROCOCOM programme will be then used for the validation of the modeling.



It is expected that you will be hosted for short periods by the partners Düsseldorf-University (Germany) and Johnson Matthey plc. (UK), and work in close collaboration with others PhD students of the network.

## You:

- Have a MSc degree in a relevant field such as **mechanical engineering**, applied mathematics, materials science or related areas.
- Have basic knowledge of continuum mechanics, finite element methods, and good English language skills.
- Have affinity with numerical simulation using finite element methods. Any experience of computation using FEM software (Abaqus®, Comsol®), will be highly appreciated,
- Have excellent communication and organizational skills.

## Conditions and eligibility:

This fellowship is offered in the context of a Marie Curie Initial Training Network and transnational mobility is a key element of eligibility. Therefore your eligibility for the position is determined by Marie Curie terms and conditions. Candidates may be either EU citizens or from outside the EU (subject to relevant immigration formalities), but applications will only be accepted from candidates who must not have resided or carried out their main activity (work, studies, etc) in France for more than 12 months in the 3 years immediately prior to the date of selection by the host institution (short stays such as holidays are not taken into account).

## Contact:

If you are eligible and interested, please e-mail the following documents to [michrafy@mines-albi.fr](mailto:michrafy@mines-albi.fr):

- a letter of application
- a detailed CV
- good level of English required (TOEFL or CAE level for example)
- Two recommendation Letters. Please provide recommendation letters from people acquainted with your work such as teachers, research advisors, or employers / supervisors.

**The position is open to start immediately!** Applicants are encouraged to submit their applications *as soon as possible*.

For more information, please, do not hesitate to contact:

A. Michrafy, [michrafy@mines-albi.fr](mailto:michrafy@mines-albi.fr)

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