JOB DESCRIPTION

Research Engineer on BUILDING PHYSICS

Lafarge Research Center
Saint-Quentin Fallavier – Lyon
France

OPERATIONAL CONTEXT

Context

Lafarge Group is considering innovation as a priority to support its strategy towards sustainable construction and emerging countries development. Understanding of the relations between microstructure and macro-properties to develop materials with new functionalities and integration into buildings through eco-design and optimization methodologies are at the basis of the research done to support innovative solutions.

Principal contacts

Mechanics & Constructive Trends Group Head and team, project teams, scientific direction.

PRINCIPAL ACTIVITIES / RESPONSABILITIES

Project activities

- Support scientific and technical activities on analyses and development of innovative solutions for sustainable construction and emerging countries,
- Manage project sub-tasks on analyses and development of innovative solutions for sustainable construction and emerging countries,
- Being proactive on building physics able to support scientific guarantee of project activities.

Expertise development

Participate in the development of the expertise in building physics. This expertise will be durably integrated into the first priority research axes for Lafarge in the coming years. It will consist in:

- Participate to the animation and development of scientific and technical competencies in building physics
    - sustain and accelerate the use and development of tools and methodologies at LCR;
    - participate to the development of experimental characterization techniques.
- Participate to the Lafarge network animation in building physics and extend it at the international level. Manage external research and development collaborations;
- Represent Lafarge and its interests into this network.

Competencies development

Develop the global technical and scientific competencies (people, tools and methodologies, characterization techniques) of the MMC group (Mechanics & Constructive Trends Group – Groupe Mécanique et Modes Constructifs), and more specifically in building physics.

Management

Safety is the first priority of Lafarge Group. Support the corresponding activities and show pro-activeness in proposing solutions and team awareness.

Lafarge also considers people development as a top priority. Management of technicians, including work tasks definition and follow-up, scientific support, professional skills development and evaluation, is also part of the job, as are knowledge sharing and training.

REQUIREMENTS

Several-year experience is required on building physics, by preference in an international context. The required competencies are:

- heat and mass transfer in materials;
- energy performance of building elements and whole building

The following competencies might be an advantage:

- hygrothermal behavior of materials and buildings;
- acoustics of materials and buildings;
- air movements and pollution;

A PhD in building physics is highly appreciated.

Practical use and development of advanced simulation tools in those fields, including optimization techniques and more generally on numerical developments (TRNSYS, ENERGY+, WUFI, Python, …)

Good knowledge on building technologies and constructive systems, ideally in an international context including hot climate countries and emerging countries.

General knowledge on civil engineering is an advantage (structural design, job-site management, construction materials…).

Language skills:

- English : mandatory;
- French : might be an advantage.

Contact: frederic.kuznik@lafarge.com or anthony.martel@lafarge.com