



PERMANENT RESEARCH POSITION “ENSEIGNANT CHERCHEUR CONFIRME” OPEN (M/F)

in INTEGRITY AND DURABILITY OF ENGINEERING STRUCTURES

Institution: MINES ParisTech (Ecole Nationale Supérieure des Mines de Paris)

Research Center: Materials Centre (Centre des Matériaux)

In the frame of the development of research and teaching activities in the area of Mechanics and Materials, MINES ParisTech, member of PSL Research University, is opening an “enseignant-chercheur confirmé” position in the integrity and durability of engineering structures. At MINES ParisTech, an “enseignant-chercheur confirmé” or senior researcher is a member of staff with a permanent position having research as main duty and some teaching commitments. Equivalent positions outside France would be *senior lecturer*.

This position is aimed at a seasoned researcher (f/m, with at least 10 years of experience after PhD) willing to develop multidisciplinary research combining fundamental and applied sciences in the area of Mechanics and Materials science in relation with industry.

1. THE RESEARCH AT MINES ParisTech

In line with its training activity, MINES ParisTech develops a research activity that covers a wide range of scientific disciplines. The eighteen research centers are organized in five departments: Earth and Environmental Sciences, Energy and Processes, Mechanics and Materials, Mathematics and Systems, and finally, Economics, Management and Society.

MINES ParisTech research aims at both academic excellence and socio-economic impact. This research model is developed in close interaction with the socio-economic world: private or public sector companies, and also institutions and public administrations. MINES ParisTech is the first school in France by its volume of research on contracts, carried by Armines, the Mines ParisTech Foundation or MINES ParisTech. This special positioning allows the School expanding its staff and maintains unique experimental and digital platforms highly appreciated by its partners.

This ability of MINES ParisTech and companies to work together on ambitious scientific and industrial issues is recognized nationally and internationally. For example, the CNRS silver medal awarded to Samuel Forest, the CNRS bronze medal awarded to Vladislav Yastrebov, the renewal of the Carnot label in 2016. MINES ParisTech is positioned at the 23rd place in the QS World University Rankings by subject and in the top 100, 150 and 300 of the Shanghai engineering thematic rankings.

2. MINES PARISTECH MATERIALS CENTRES

The Centre des Matériaux, located in Evry (35 km south of Paris), is associated with the CNRS (UMR 7633). Research in the fields of material behavior as well as processing at the Materials Centre is based on wide ranging multi-disciplinary approach. Industrial structures such nuclear reactors, pipelines, conventional power plants, planes... may be subjected to exceptional loads for which one should be able to ensure safety of the installation. These structures are also designed for very long periods of time and it is necessary to take into account the aging of materials (irradiation, corrosion, fatigue, thermal aging,...) in the safety analysis. The center of materials contributes to this approach in close collaboration with its partners (EdF, Engie, GRT-Gaz, Framatome, CEA, AIRBUS, Total, Arcelor-Mittal, SAFRAN,...)

The position to be filled will be located at the Centre des Matériaux (<http://www.mat.mines-paristech.fr/>) which consists of about 75 permanent faculty members, technical and administrative staff and 90 PhD students and post-docs. The Materials Research Centre wishes to strengthen its team in the field of durability and safety of industrial structures.

3. POSITION DESCRIPTION

The candidate is expected to be able to perform autonomous fundamental and applied research in the area of the durability and safety of industrial structures. He/she will be working together the «MIMEX» and « SIMS » research teams combining mechanical testing, microstructural observations and models for the non-linear behavior, damage and failure of materials. This work will be carried out in the framework of the “Local Approach to Failure”.

He/she will have to develop innovative experimental devices (small size samples, large size test, specific environmental - thermal - mechanical loading, full size tests in collaboration with partners,...). He/she should have some experience in the management of national and/or European projects and will have a strong publication record (Articles in peer-reviewed journals, communications in international conferences, chapters in collective works, etc...). He/she should demonstrate his/her ability to supervise doctoral students and to be able to significantly contribute to the research and financing strategy of the Laboratory through industrial and academic partnerships.

Research

The successful candidate is expected to supervise a number of PhD students, post-doctoral researchers and trainees while developing his/her own research activities in the field of the durability and safety of industrial structures. He/she will be expected:

- To propose new topics and perform research with a high scientific visibility and industrial attractivity ;
- Apply for projects on the national and international level and collaborate with industrial partners keeping, at the same time, high scientific standards;
- Publish in the best scientific journals.

Teaching

The successful candidate is expected to participate to various teaching activities at MINES ParisTech, including lectures for “Paris Sciences et Lettres” (PSL) Research University and as such will have a significant educational experience.

He/she will participate in teaching for Executive Engineering program of MINES ParisTech and students’. He/she will also be involved in tutoring of Post-Master students in his/her area of expertise.

He/she will also be encouraged to suggest new courses to widen the scope of lectures offered by MINES ParisTech.

Candidate qualifications

Applicants should be researchers graduated from an Engineering School or a University with a doctorate in Materials Science or Mechanical Engineering. The candidate will possess strong knowledge in mechanics and physics of materials. He/she should be able to perform numerical modelling by finite elements. Knowledge in fracture mechanics and experience in numerical simulation are highly desired. Experimental skills will be welcome. He/she must show an interest in developing a very high level research able to attract international scientific recognition in partnership with researchers at Centre des Matériaux. Postdoctoral and/or work experience in an international context, ideally including a significant time abroad, will be highly appreciated. Similarly, the applicant should demonstrate his/her ability to manage projects with industry and academic partners and write proposals for published research calls. These projects will combine experimental, theoretical research as well as numerical simulations. The nominee must have demonstrated good leadership skills (PhD students, post-docs, technical support staff), the ability to work in a team, good publication records and high international visibility. Mastering written and spoken English is mandatory. He/she should also be willing to teach French to foreign students/researchers.

4. APPLICATION FILE

The application should consist of the following documents (in a single PDF file is possible):

- A cover letter
- A detailed CV
- Research project (5 pages limit)
- List of publications and of oral communications at scientific conferences
- Three recommendation letters to be sent by the reference person directly to recrutement_mimex@mat.mines-paristech.fr. Optionally, to provide contact details of three researches to be contacted for recommendation.
- Copies of official transcripts for all degrees at all institutions attended

**Please send the documents before May 6th 2019, to the following address:
recrutement_mimex@mat.mines-paristech.fr**