

FULL TIME POSITION (50% ACADEMIC TENURE TRACK PROFESSOR KU LEUVEN & 50% SW2 WORKLEADER KIK-IRPA): PREVENTIVE CONSERVATION OF CULTURAL HERITAGE MONUMENTS AND COLLECTIONS IN THE FACE OF (CLIMATE-CHANGE AFFECTED) HUMIDITY AND TEMPERATURE CHALLENGES

JOB TITLE DESCRIPTION

A full-time position is available on *preventive conservation of cultural heritage monuments and collections in the face of (climate-change affected) humidity and temperature challenges*. This vacancy consists of 50 % academic tenure track at KU Leuven and 50 % SW2 work leader at the Royal Institute of Cultural Heritage (KIK-IRPA). This position implements the FED-tWIN research profile “CNSRV/HU&TE” (code: Prf-2021R-004) which is part of the Belgian federal [FED-tWIN Programme of sustainable research cooperation between the federal scientific institutes and the universities](#).

The 50% academic tenure track position at KU Leuven is located in the Science, Engineering and Technology Group, Faculty of Engineering Science, Department of Civil Engineering, Building Physics and Sustainable Design section; the 50% work leader position at KIK-IRPA is located in the Monuments and Monumental Decorations Laboratory.

PLACE OF EMPLOYMENT

- KU Leuven, Department of Civil Engineering, Building Physics and Sustainable Design, Kasteelpark Arenberg 40, 3001 Leuven, Belgium.
- Royal Institute of Cultural Heritage (KIK-IRPA), Monuments and Monumental Decorations Laboratory, Jubelpark 1, 1000 Brussel, Belgium.

KU Leuven’s Building Physics and Sustainable Design section is internationally recognized as one of the leading building physical groups in the world, with a core expertise on hygrothermal building performance assessment and optimisation. To that aim, the section develops and performs numerical and experimental research activities on a wide spectrum of scales, from building materials over building components and whole buildings to building districts. To support these research activities, the section actively develops and maintains a wide range of experimental research facilities, and equally employs and improves a varied array of hygrothermal simulation models.

The [Building Physics and Sustainable Design section](#) is a member of [Energyville](#), a partnership of KU Leuven, VITO, imec and UHasselt. The section also is a member of the [KU Leuven Institute for Cultural Heritage HER-KUL](#), [KU Leuven Material Research Centre](#) and [KU Leuven XCT Core Facility](#). At the national level, the section collaborates strongly with KIK-IRPA, Buildwise, Flemish and Federal governments, ... Internationally there is a strong interaction with building physics groups in the framework of European projects and collaborative research projects of the International Energy Agency. The section e.g. acted as work package leader in the [H2020 RIBuild](#) on internal insulation of historic buildings.

The Royal Institute of Cultural Heritage is one out of the ten federal scientific institutions that are part of the Belgian Science Policy. The KIK-IRPA has been devoted to documenting, investigating and conserving the artistic and cultural heritage of Belgium. Particularly, it targets the inventory, the research, the conservation as well as the promotion of the country’s artistic and cultural heritage. The institute, whose prime

mission is scientific research and public service, represents a unique instrument for the (im)movable cultural heritage of Belgium. KIK-IRPA's three departments bring together art historians, photographers, scientists and conservator-restorers. By comparing their research and observations, reference data can be collected and the degree of intervention required for possible restoration work can be determined, from different points of view: their composition, evolution, ageing of materials and how to treat them. Their specialists advise researchers and curators of both public and private collections. The [Monuments and Monumental Decorations Laboratory](#) develops numerical and analytical research activities in fields as salt crystallization in porous media, consolidation treatments of heritage materials and the analysis and mitigation of climate change effects on cultural heritage. The laboratory currently is the coordinator of the national research projects PREDICT and CLIMPACTH. There moreover is a strong national and international collaboration with universities and governmental organizations.

DUTIES

RESEARCH

The sought research profile is to become the leading authority in Belgium and abroad on preventive conservation for the sustainable management of cultural heritage monuments and collections, with a focus on the interactions of hygrothermal conditions, responses and damages, and the impact of climate change on these. You therefore develop research activities towards:

1. establishing the required rigidity/permitted tolerance with respect to preventive conservation of cultural heritage monuments and collections, with attention for the impact of climate change;
2. optimizing the preventive conservation of cultural heritage monuments and collections with respect to energy use and pollutant emission in particular and resource spending in general;

The foreseen research lines are threefold:

1. hygrothermal conditions around cultural heritage monuments/collections: how does climate change affect exterior and interior hygrothermal environments around monuments/collections;
2. hygrothermal responses of cultural heritage monuments/collections: how do monuments/collections hygrothermally behave in response to the (changing) interior and exterior environments;
3. hygrothermal damages to cultural heritage monuments/collections: how does damage to monuments/collections arise from their responses to (changing) interior and exterior environments;

To develop the research lines, you leverage KIK-IRPA's expertise on preventive conservation of monuments and collections as well as KU Leuven's experience with hygrothermal material and structure measurements and simulations, and bridge these to obtain an optimal synergy between both institutes. To support these research activities, you develop a research group by attracting funding and researchers.

You engage in targeted scientific research, resulting in PhD's and publications that meet international standards and lead to broad international recognition. As part of your research programme, you develop international partnerships, within the academic world as well as in close cooperation with stakeholders, in order to achieve industrial innovation and scientific output that adheres to the highest international standards. You support or initiate a network of companies through the valorisation of research results and by delivering services to achieve technology transfer and application of the results of your research to stakeholders/government/society.

You will supervise and support PhD students and contribute to the preparation and management of new research projects. You will have a collaborative spirit and liaise with collaborators. You need to be able to organize and troubleshoot your work independently, document it thoroughly, communicate results as well as to lead a team in a transparent and professional manner.

TEACHING

You contribute to high-quality education within the master programmes of [conservation of monuments and sites](#), [civil and building engineering](#) and [architectural engineering](#). The teaching load will be in accordance with the 50% employment at KU Leuven. You also contribute to the pedagogical project of the university by the supervision of master theses. You develop your teaching in accordance with KU Leuven's vision on activating and research-based education and make use of the possibilities for the educational professionalisation offered by the faculty and the university.

The official language used at KU Leuven is Dutch. If you do not speak Dutch (or do not speak it well) at the start of employment, KU Leuven will provide language training to enable you to take part in meetings. Before teaching courses in Dutch or English, you will be given the opportunity to learn Dutch, respectively English, to the required standard. You are required to master the Dutch language at the CERF level B2 within five years of being appointed. To teach a course in Dutch or in English, you need to master that language at native or CERF level C1.

SERVICES

You provide services to the scientific community, to the society and to the university, with a particular focus on service to government and stakeholders in the context of the research profile, and on dissemination and outreach.

You are responsible for setting up a research-to-operations plan to valorise your research within KIK-IRPA and KU Leuven. You coordinate the correct implementation of this plan and take an active hands-on role when needed. You and your future team of researchers also take part in the continuous development and validation of any operational products derived from your research. You develop a strong network with stakeholders, from government policy centers to end users as building managers, museum conservators, ... Communication with these stakeholders, the scientific community and the public is important.

PROFILE

You have a PhD degree in building, architectural, civil or materials engineering. The degree should have been obtained maximum 12 years before the application date. The 12-year period is extended by one year for each maternity, parental and adoption leave and for each long-term sick leave of yourself or your immediate family.

You preferably have experience with the heritage sector, in particular in relation to the preventive conservation of cultural heritage monuments or collections. Expertise in computer modelling of materials and structures (preferably targeting hygrothermal simulations) and in damage assessment in the context of cultural heritage monuments or collections is highly recommended. You furthermore have a proven track record in scientific research, via high-impact publications and a broad international network. Because of the nature of the position, you should possess good communication and management skills. Excellent writing skills for scientific papers and for peer guidelines as well as a thorough knowledge of English are a must. You moreover should have a strong interest in applying innovative research to the development of operational services, possess organisational skills and have a cooperative attitude. You also possess leadership competences.

OFFER

Within the FED-TWIN framework, we offer full-time employment in an intellectually challenging environment: half time at KU Leuven and half time at KIK-IRPA, with starting date September 1 2023.

KU Leuven is a research-intensive, internationally oriented university that carries out both fundamental and applied scientific research. Our university is highly focused on interdisciplinary and multidisciplinary research and strives for international excellence. In this regard, the university actively works together with research partners in Belgium and abroad and provides its students with an academic education that is based on high-quality scientific research.

KIK-IRPA is a federal scientific institute falling within the competence of the Federal Ministry of Scientific Policy of Belgium. Our institute is committed to Belgian's artistic and cultural heritage, playing a prominent role, nationally and internationally, in the interdisciplinary study and conservation-restoration of our heritage and the diffusion of tools for researchers, public authorities, museum conservators and the public.

Because we are looking for junior researchers, at KU Leuven, you will be appointed for 50% on the tenure track for a period of 5 years. At the end of this period and a positive evaluation, you are permanently appointed (or tenured) for 50% as an associate professor. In Belgium, assistant professors are allowed to be main supervisor of a PhD and can autonomously apply as principal investigator for research grants. At KIK-IRPA, you will be appointed for 50% on a permanent position as work leader (salary scale SW2).

KU Leuven is well set to welcome foreign professors and their family and provides practical support with regard to immigration & administration, housing, childcare, learning Dutch, partner career coaching, ... To facilitate scientific onboarding and accelerate research in the first phase a starting grant of 110.000 euro is offered to new professors without substantial other funding, appointed for at least 50%.

Different extra-legal benefits are offered both at KU Leuven and KIK-IRPA:

- Flexible schedule and possibility to work occasionally from home.
- Refund of commuting expenses when using public transportation or bicycle.
- Access to special advantages arranged for employees of the federal scientific institutions (e.g. possibility to follow trainings, hospitality insurance).
- The opportunity to interact with several world-class investigators at both institutions, as well as in Europe and abroad (through an established network and research consortia).
- For the KU Leuven contract a salary in grade 14 is offered.
- At KIK-IRPA, the salary will follow federal regulations for the scientific career in the SW2 scale, with possibility to acquire a French-Dutch bilingualism bonus.
- All relevant work experience (public + private sector) will be considered when determining seniority.

INTERESTED?

For more information on the contents of the job, please contact:

- prof.dr.ir. Hans Janssen, FED-tWIN position promotor at KU Leuven: hans.janssen@kuleuven.be, +32 16 32 13 26; or
- ir. Roald Hayen, FED-tWIN position promotor at KIK-IRPA: roald.hayen@kikirpa.be, +32 2 739 68 67

You can submit your application until 04-04-2023, only through our [online application system](#). If you have problems submitting your application online, please send an email to solliciteren@kuleuven.be. Please do note already that the interviews will take place on 24-04-2023.

Add to your application following documents in English (more information is available on the KU Leuven job site):

- your [biosketch](#) in which you indicate your added value as an academic for research, education and service to society of your past career and of your future activities (maximum 2 pages);
- a [file on your five most important publications or realisations](#);
- an [extensive cv](#) including a full publication list and if applicable a portfolio of your projects;
- your [research plan](#) with focus on the development of your research line and research team in relation to the colleague-researchers of the entity of employment (maximum 4 pages);
- your [vision on academic education](#) and its organisation (maximum 2 pages);
- your [contribution to society](#) by outreach and public communication on science and technology, internal representation in boards and councils and service activities directly in relation to your developed expertise (maximum 1 page);
- your [vision on leadership](#) (maximum 1 page).

KU Leuven and KIK-IRPA are committed to creating a diverse environment and are therefore equal opportunity employers. They explicitly encourage candidates from groups that are currently underrepresented at the university and the institute to submit their applications. KU Leuven places great importance on research integrity and ethical conduct and will therefore ask you to sign an integrity statement upon appointment.