

**Open position for a 4-YEAR SALARIED FULL-TIME RESEARCHER towards a PhD degree in Biomedical Sciences of KU Leuven**

*BIOMAT - Biomaterials Research group, Department of Oral Health Sciences, KU Leuven (University of Leuven), Leuven, Belgium.*

**Prof. B. Van Meerbeek, Dr. B. Lagrain, Prof. M. Peumans, Dr. K. Yoshihara,  
Prof. B. Sels, Prof. K.L. Van Landuyt**

**TOWARDS a NEW GENERATION of BIOSAFE & BIOACTIVE COMPOSITES for TOOTH RESTORATION**

Resin composite is currently the most widely used material in dentistry, enabling minimally invasive and invisible tooth restoration. However, there is a particular safety concern regarding the release of the endocrine disruptor 'bisphenol A' (BPA). BPA can be present in composites as production contaminant and/or degradation product, originating from BPA-based monomers such as BisGMA. The latter serves as a polymerization 'cross-linker' and is a main monomer matrix ingredient of today's commercial dental composites. Thanks to a recently patented KU Leuven research&development breakthrough, BPA-free bi-aromatic diols have been synthesized from wood and appear very promising to replace BisGMA with even the potential to further improve the physico-mechanical properties of composite. Besides improved biocompatibility, there exists a definite need to upgrade dental composite with therapeutic function. Resin composite with antibacterial and/or remineralization potential to prevent secondary caries and eventually to extend the longevity of composite restorations is highly desirable. A self-developed method using Namontmorillonite clay as a carrier for gradual antibacterial agent delivery as well as dual-functional bioactive glass filler possessing both antibacterial properties and remineralization capability are innovative technologies that will be employed to develop a new generation of BIOSAFE and BIOACTIVE dental composites.

*The BIOMAT research group focuses on diverse kinds of biomaterials with orofacial application, and encompasses fundamental material science and biological cell culture, micro-organism and animal research, as well as applied laboratory and clinical research.*

*Current major research lines include:*

- *Biocompatibility and cariogenicity of dental biomaterials*
- *Dental adhesive technology*
- *Translational research from fundamental material science to clinical trials*
- *Dental ceramics as restorative and implant biomaterial*
- *Endodontology, including pulp capping, pulp revascularization and regeneration*
- *Clinical evaluation of direct, semi-direct and indirect adhesive restorative materials and procedures*

*BIOMAT's research expertise in dental biomaterials supported by the scientific expertise from existing research collaborations with bioengineers, chemists, environmental health scientists and material scientists, along with state-of-the-art and high-end research equipment available at BIOMAT and KU Leuven, altogether form the structure needed to successfully run this project and to provide data that*

*can serve as a good basis for future applied research in the research domains involved. In the past years, we have built a vast expertise in material development, physico-mechanical and chemical biomaterial characterization, as well as mechanistic research on biological interactions of biomaterials.*

**REQUIREMENTS**

The candidate should be a **holder of a university degree** (such as or equivalent to Master in ‘*Biomedical Sciences*’, ‘*Dentistry*’, ‘*Medicine*’, ‘*Biology*’, ‘*Bio-science Engineering*’, ‘*Materials engineering*’, ‘*Chemistry*’, etc.) and should have a particular interest in biomaterials research (physico-mechanical biomaterial properties, chemical analysis, bioactive properties, etc.). The candidate must be able to work in team, as he/she will work in close collaboration with another PhD student, who will focus on biocompatibility testing. The candidate is expected to conduct the project towards a PhD degree, which includes a 4-year program, and therefore needs to enroll in the KU Leuven PhD program of the Biomedical Sciences Doctoral School.

**DATE OF ENTRANCE:** as early as possible (post ‘coronavirus’ time)  
**Expected date of project end:** 4 years later

**OFFER:**

- Attractive 4-year full-time employment contract - continuation after the first 6 months/year is dependent upon a positive evaluation.
- Supervision by recognized experts and access to state-of-the-art research infrastructure.
- Highly innovative research project aiming to improve dental composite technology.
- Training in complementary skills via participation at local and network-based events.
- Salaried position according to the KU Leuven salary rates for PhD students.

**SELECTION METHOD:**

The selection will be based on the comparison of the submitted applications by an *ad hoc* selection committee, most likely including an online interview with the pre-selected candidates.

*For more information, please contact Prof. dr. Bart Van Meerbeek (bart.vanmeerbeek@kuleuven.be) or Mr. Ben Mercelis (benjamin.mercelis@kuleuven.be).*

**You can apply for this job no later than APRIL 20, 2020 via the KU Leuven online application tool available at <https://www.kuleuven.be/personeel/jobsite/jobs/55616287>.**

**Funding:**

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**Further information** with regard to KU Leuven and ‘Living in Leuven’ can be found on ‘<http://www.kuleuven.be/english/>’, with regard to the PhD program of the Biomedical Doctoral school on ‘<https://gbiomed.kuleuven.be/english/>’, and with regard to the KU Leuven - BIOMAT on ‘<https://gbiomed.kuleuven.be/biomat/>’.