

Hosting offer for Marie Skłodowska-Curie Postdoctoral Fellowships (PF) 2022 at University of Antwerp/research group A-Sense Lab/Centre of Excellence NANOLab

[MSCA Postdoctoral Fellowships](#) are individual research grants offering excellent postdoctoral researchers the chance to develop their skills by means of international mobility. Through the implementation of an original and personalised research project, MSCA Postdoctoral Fellowships aim to foster excellence through training and mobility and to equip researchers with new skills and competences in order to identify solutions to current and future challenges.

University of Antwerp/research group A-Sense Lab invites motivated postdoctoral researchers to jointly prepare an application for the [MSCA-PF-2022 call Marie Skłodowska-Curie Postdoctoral Fellowships](#) call ([MSCA-PF-2022](#)) with them as host organisation.

Description of Hosting organisation/group

A-Sense Lab is one of the research groups of the Bioscience Engineering Department of the Faculty of Sciences at the University of Antwerp. The acronym "A-Sense Lab" stands for Antwerp Electrochemical and Analytical Sciences Lab. The word "Sense" refers to "sensing and detection", which is one of our core research activities. In everything we do, we contribute to a more healthy and safe world. We introduce fundamental innovation in sensing and detection in a wide area of applications (Figure 1). Together with our partners, we bridge the gap

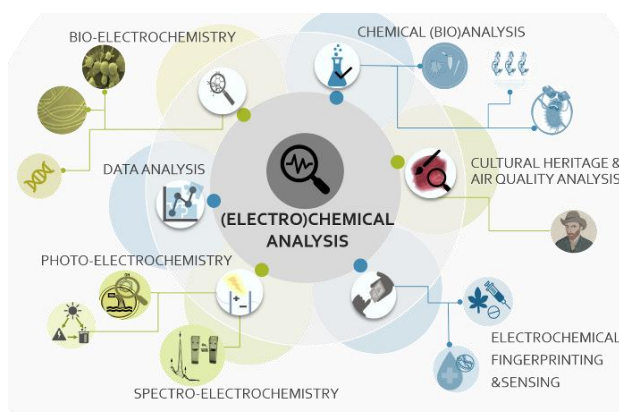


Figure 1. General scheme of the areas of A-Sense Lab.

between the academic world, industry and society. We are open to collaboration with academic groups, industrial partners and governmental organizations. A-Sense Lab is a member of the IOF-ENVIROMICS consortium and NANOLab Center of Excellence. During their (post-) doctoral research, the group members can benefit from an extensive range of analytical and electrochemical equipment in A-Sense Lab. The group members employ a wide range of versatile commercial and home-built instruments and techniques such as: chromatography (Metrohm 883 Basic IC plus), electrochemistry (Metrohm Autolab PGSTAT 101, PGSTAT 302N, μ Autolab Type III and μ Autolab Type III FRA2), electron microscopy (Zeiss EVO10 and FEI Quanta 250 FEG ESEM-WDX), optical microscopy (Nikon LV100ND), sample preparation (Leica ACE200 and Leica HistoCore Nanocut R), screen printing (DEK NeoHorizon 01iX and DIMA Spectro UV-500) and vibrational spectroscopy (Renishaw InVia Qontor). A-Sense lab has hosted several MSCA postdocs and is participating in national and European projects such as Bordersens. <https://www.uantwerpen.be/en/research-groups/a-sense-lab/>

Topics/expertise

The host research group has the experience and background knowledge in electrochemical fingerprinting/sensing, photo-electrochemistry, bio-electrochemistry, data analysis, chemical (bio)analysis, cultural heritage & air quality analysis and spectro-electrochemistry. A-Sense Lab has extensive expertise in sensing strategies for illicit drug monitoring, the study of pigment degradation, antibiotic resistance and elucidation of oxidation pathways on electrochemical sensors, targeting also phenolic and other endocrine disruptive chemicals in environmental and industrial samples. During the last years, the group is putting more effort and focus into (bio)applications to explore and develop tools and devices able to monitor a wide range of biomolecules such as nucleic acids, hormones, and proteins as cancer biomarkers aiming also for non-invasive methodologies and designs. Herein, the concept and application of wearable (bio)sensors are becoming crucial. The wearable revolution is already present in society through numerous gadgets. However, the contest remains in fully deployable wearable (bio)chemical sensing. Therefore, wearable

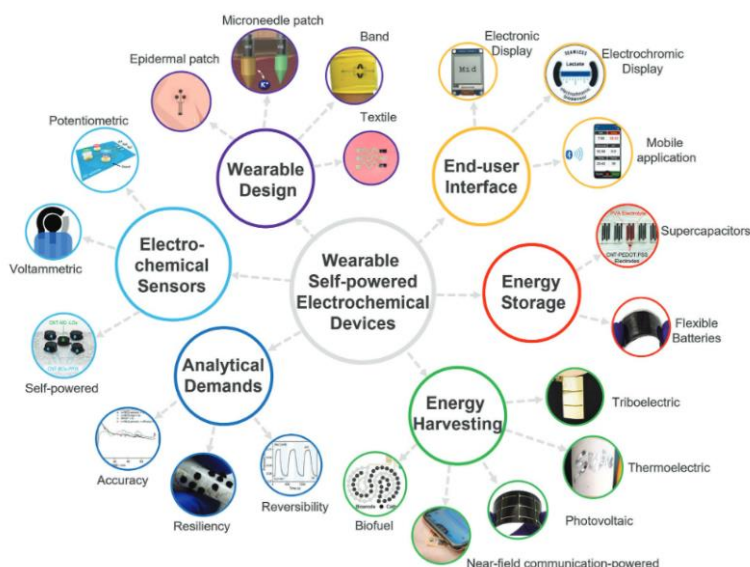


Figure 2. Example of wearable electrochemical devices.

electrochemical sensors driven by the user-friendly capability of on-site detection of key biomarkers for health management is one of the main goals of our research group. Developing this type of (bio)sensors, A-Sense Lab aims to successfully monitor (bio)chemical parameters of the body toward personalized, predictive, and importantly, preventive healthcare.

Prof. dr. Karolien De Wael is a full professor since 2018 at University of Antwerp. Her strategic vision aims at a portfolio of sensor technologies (from fundamental to application-oriented research) that can be applied in different markets/sectors embracing the idea of responsible research and innovation.

Dr. Marc Parrilla is currently a senior postdoc at A-Sense lab. During his career, he has worked mainly in the development of wearable electrochemical sensors and point-of-care devices for the detection and monitoring of relevant targets for society.

Your profile

- Expected qualifications/expertise of the candidate:
 - PhD degree in electrochemistry, nanomaterials, analytical chemistry, applied engineering, biotechnology, or biochemistry related.
 - Strong interpersonal and communication skills.
 - A creative and analytical mind.
 - Strong publication record.
 - Proactivity and willingness to work in a multidisciplinary approach.
 - In view of the international context, mastering the English language (both oral and written) is mandatory.
- You must have a completed PhD at the time of the call deadline (14 September 2022).
- Candidates must have a maximum of 8 years full-time research experience from the PhD award date until September 14, 2022. Periods of inactivity in research (e.g. unemployment, periods of

employment outside research, parental or sick leave) do not count towards the time of research experience.

- For European fellowships, candidates can be of any nationality and must not have resided or carried out their main activity (work, studies, etc.) in Belgium for more than 12 months in the 36 months immediately before September 14, 2022.
- Highly motivated candidate with an excellent research track record appropriate to career stage, as evidenced by academic publications and other scientific output.

What we offer

- Support and guidance for the preparation of your MSCA PF proposal
- A stimulating, interdisciplinary environment for high-level research.

How to apply?

Indicate your interest by contacting the host institution as follows:

Please contact Prof. Dr. Karolien De Wael (Karolien.dewael@uantwerpen.be) and/or Dr. Marc Parrilla Pons (marc.parrillapons@uantwerpen.be) by e-mail with a short CV and motivation to indicate your interest to prepare a MSCA-PF application.

After the supervisor agrees to support you as a MSCA-PF candidate, you can start preparation of MSCA PF project proposal and will be supported further by the supervisor and the Research Support Office of the host university.

For more information on the MSCA PF scheme or the host institution, you can contact the MSCA coordinator of the University of Antwerp: Dr. Liesbet Cockx (Research, Innovation & Valorisation Antwerp, Grants Office): Liesbet.cockx@uantwerpen.be