



**Institute for Radical Chemistry**  
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## **Two post-doctoral positions in Mass Spectrometry Imaging**

Two post-doctoral positions are currently open at Aix Marseille University (France) to develop mass spectrometry imaging in the research group of Pr Laurence Charles at the Institute for Radical Chemistry (<https://icr.univ-amu.fr>).

Main field of application is decoding of digital information written in the backbone of sequence-defined chains such as oligonucleotides and abiotic polymers, which structure is often specifically designed to best use tandem mass spectrometry as an efficient reading methodology. Specific arrangement of encoded species on surfaces is currently considered as the best option to enable massive storage of information, that would hence be read as chemical images. Yet, this requires ionization techniques with surface sampling capabilities and MS/MS coupling, such as the desorption electrospray ionization (DESI) and matrix-assisted laser desorption/ionization (MALDI) sources available in our Synapt G2 instrument.

In this context, we are looking for two post-doctoral researchers to develop and optimize MSI methods for high throughput reading of chemically-encoded digital information. Using DESI, one candidate will investigate how experimental parameters, such as surface properties, influence charge state distribution and ion yield, two key issues for de novo sequencing of digital chains. Using MALDI, the second candidate will focus on sample preparations to optimize sequencing strategies (MS/MS of intact species vs in-source fragmentation) as a function of molecular designs. These research works will be performed in close collaboration with the developers of the MS-DECODER software in the group of Dr Christine Carapito and with chemists in charge of polymer synthesis in the group of Dr Jean-François Lutz, both located in Strasbourg (France).

Candidates should have a PhD in mass spectrometry and, ideally, be specialized in molecular imaging. They should have a strong expertise in ionization processes while a convincing experience in MS/MS sequencing would be a plus. A clear motivation for experimental works, the ability to work in a multi-disciplinary team on scientifically challenging problems as well as good English communications skills (oral and written) are also requested.

Duration of both contracts is 1 year, starting early 2022, with possible 2<sup>nd</sup> year extension. As a function of past experience, the proposed net salary ranges between 1980 and 2320 €/month.

Candidates are invited to submit a CV, a cover letter and the contact details of at least two references to Pr Laurence Charles ([laurence.charles@univ-amu.fr](mailto:laurence.charles@univ-amu.fr)).