STSM Title: MOLECULAR IMAGING OF MAIZE SEEDS CONTAMINATED WITH AFB1 AND CHARACTERIZATION OF NEW BIOMARKERS FOR FORENSIC APPLICATIONS

From Serbia to Netherlands
STSM by Dragana Bartolić,
(04. 03. 2019 - 29. 03. 2019)

My name is Dragana Bartolić and I am a Ph.D. student at the Faculty of Chemistry and a researcher at the Institute of Multidisciplinary Research, at the University of Belgrade in Serbia. Through a Short-term Scientific Mission (STSM) supported by COST CA 16101, I had the chance to spend 25 days at the Multi-Modal Molecular Imaging Institute (M4I) in Maastricht. This was my first STSM and it was a valuable experience to work with the colleagues from M4I and become a part of the research group of Prof. Dr. Ron Heeren.

This STSM focuses on the molecular imaging of maize seeds, that are contaminated with aflatoxin B1 (AFB1) and the characterization of new biomarkers for forensic applications. I had the opportunity to learn from MSI experts the sample preparation for MSI analysis. Furthermore, I learned new molecular imaging techniques, such as the use of Matrix-assisted laser desorption/ionization (MALDI) imaging mass spectrometry (MSI).

We optimized the experimental conditions for the sample preparation (of the seed sections) for MSI analysis. We recorded MSI images of the aflatoxin-stressed seed sections. Unfortunately, because of the short time period, it was not possible to complete all of our experiments that were originally planned. Therefore, we plan to continue our collaboration on the study of aflatoxin-stressed seeds for the characterization of new biomarkers for forensic application by MSI imaging. We plan to publish the final results of this collaboration and present our work on an imaging conference.