Activity Report for ICNMTA 2026 Conference in Sendai, Japan

I had the opportunity to attend the International Conference on Nuclear Microprobe Technology and Applications (ICNMTA 2026), held in Sendai, Japan, from 5th to 10th July 2026, together with the pre-conference microbeam school. The visit was a valuable opportunity to present my doctoral research, strengthen my understanding of nuclear microprobe methods, and connect with the international research community.

The ICNMTA pre-conference school, held on 4th and 5th July 2026, provided insightful lectures and training on accelerator and microbeam operation. This was particularly useful for my work with micro-particle induced X-ray emission (micro-PIXE), helping me connect the principles of beam production and optimization with the practical requirements of analyzing plant tissues.

I successfully delivered my oral presentation titled “Investigation of tungsten uptake and accumulation in hydroponically grown wheat and rapeseed using nuclear microprobe analysis”, in the “Multimodal imaging & Cultural Heritage” session on 6th July. This research supports the assessment of potential agricultural contamination and food-chain transfer following an accidental release of tungsten radionuclides from the European Spallation Source. Presenting to an international audience was an important opportunity to communicate my results and develop my confidence as an early career researcher.

The sessions on “Life sciences”, “Multimodal imaging & Cultural Heritage” and “Accelerator and microprobe” were especially relevant to my research. Presentations on complementary imaging methods highlighted how combining analytical techniques can improve the interpretation of elemental distributions. The presentation on ion transport systems governing plant responses also provided useful biological context for interpreting tissue-specific elemental accumulation. These topics encouraged me to consider sample preservation, irradiation effects, and the relationship between elemental maps and plant physiology more carefully in my own work.

The conference also allowed me to catch up with other early career researchers working in the same field and meet prominent, established researchers. Exchanging experiences with peers from different countries broadened my perspective on shared experimental challenges and opened connections that may lead to future collaborations. The visit to the NanoTerasu synchrotron facility in Japan was particularly encouraging and strengthened my interest in complementary approaches to studying elemental distributions in biological materials.

Overall, this was a successful and motivating conference visit, combining insightful lectures, scientific exchange and professional development. I plan to contribute to the conference proceedings and build on the connections established during the meeting. I am grateful to PIANOFORTE for the travel grant that made my participation possible.

Aishee Ghosh

Uppsala University, Sweden

This partnership has received funding from the European Union’s “EURATOM” research and innovation program under the 101061037 grant agreement.