

# NexMPI 3<sup>rd</sup> Training School: Characterization of Magnetic Nanoparticles in MPI

Department of Physics, University of Aveiro  
Aveiro, Portugal

15-17<sup>th</sup> June, 2026

The primary goal of this Training School is to provide students with hands-on experience in handling different equipment for magnetic characterization. Participants will have the unique opportunity to characterize their own samples while learning the fundamentals of each technique.

Students will receive training and analyze their sample(s) using: **VSM, MPI, MPS, and ACS. ICP elemental analysis** will be used for Fe concentration determination on samples received by **June 8th**.

During/after the hands-on sessions, NPs will be characterized in a variety of environments to evaluate their performance in realistic scenarios:

- *Reference Media*: Characterization in water for baseline properties (during the TS).
- *Viscosity Studies*: Measurements in glycerol will be done to investigate the influence of medium viscosity on Brownian vs. Néel relaxation (to be done after the TS in selected samples).
- *Complex Biological Media*: NPs in media containing proteins (BSA/HSA), salts, etc. will be used to simulate the formation of protein corona and study the impact on MPI/MHT signals (to be done after the TS in selected samples).

Data collected can also contribute to a collaborative paper tentatively entitled: "A Comprehensive Library of Magnetic Tracers for Next-Generation Theranostics".

## – APPLICATION FORM –

<i>Name:</i>	
<i>Email:</i>	
<i>Affiliation or institution:</i>	
<i>Address:</i>	
<i>Status (e.g. PhD student, PostDoc):</i>	
<i>NexMPI Working Group(s):</i>	

### **Research interests**

Explain your current research interests and work, or your PhD project, and demonstrate its relevance to the main aims of NexMPI and the Training School (500 words maximum).

### **Expected outputs**

Explain how you think you will benefit from your participation at the Training School (500 words maximum).

## – SAMPLE CHARACTERIZATION –

No	Question	Yes/No
1	Do you plan to bring samples to characterize during the training? If so, both the <b>report document</b> and the <b>samples</b> must reach Aveiro by <b>June 15<sup>th</sup></b> .	
2	Would you like your results to be included in the collaborative paper? <i>(Note: You can opt out at any time; we are currently gauging interest.)</i> If so, both the <b>report document</b> and the <b>samples</b> must reach Aveiro by <b>June 8<sup>th</sup></b> .	

### Notes:

- The “report document” mentioned above will be mailed out to accepted applicants in mid-May.
- **Sample amounts:** 1 mL per sample at **2.5–5 mg/mL in distilled water**.
- We are specifically looking for series of samples to screen performance:
  - **Size Series:** Different core sizes, same coating.
  - **Coating Series:** Same core size, different coatings or targeting ligands.
  - **Other Materials:** Encapsulated NPs (lipids/polymers), NPs with composition different from iron oxide, or assemblies.
  - **Identify NP type and quantity:** \_\_\_\_\_

**Disclaimer:** Due to time restrictions there is no guarantee that all samples will be characterized *during* the TS. Some samples may be characterized *after* the TS.

### Further Information

1. Please return the completed form to the Grant Awarding Coordinator, Dr. Sofia Lima ([grants@nexmpi.eu](mailto:grants@nexmpi.eu))
2. A soft application deadline is **midnight Monday May 4<sup>th</sup>, 2026**. Applications received after that date will be considered if space is available.
3. Space is limited, so we encourage you to submit your application as soon as possible.
4. The *NexMPI* COST Action will support accepted applicants by funding travel expenses and a per diem allowance.