

With this project we intend to develop optical sensors for the detection of water pollutants

This will be done through the preparation of luminescent compounds based on lanthanides and MOFs

- **Lanthanide Ions:** they have remarkable properties, in particular their photoluminescence.
- **Metal-organic Frameworks (MOFs):** are porous crystalline materials made of an inorganic metal center and self-assembly polydentate organic ligands.

### Project stages

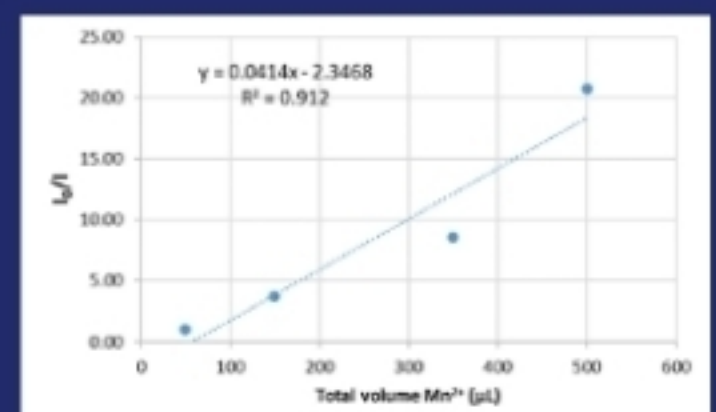
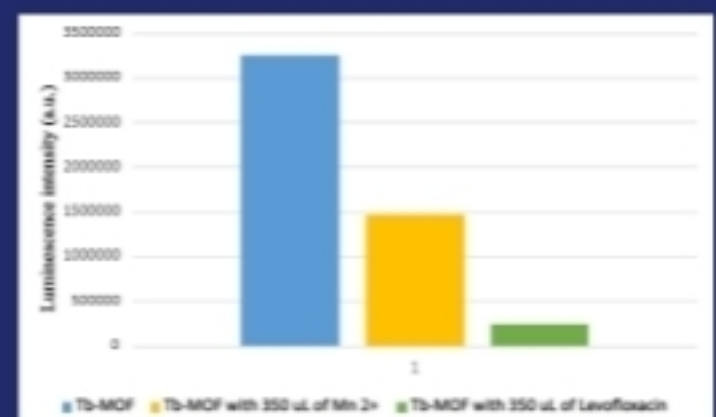
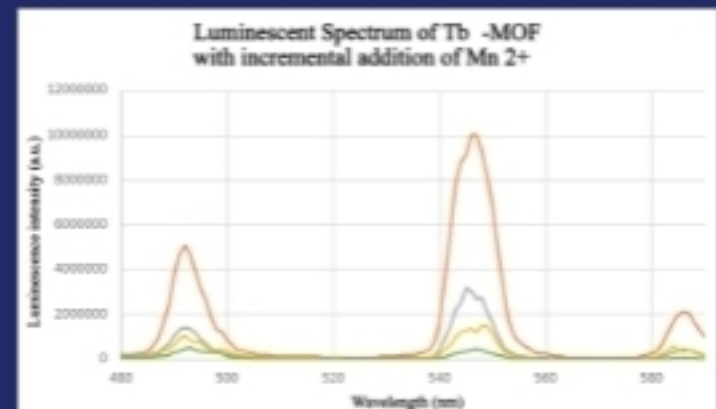
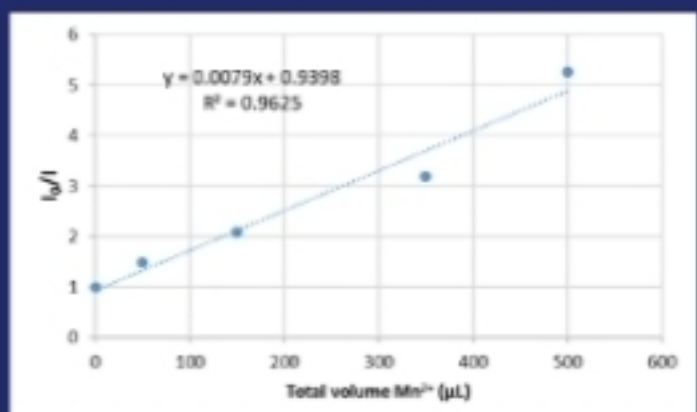
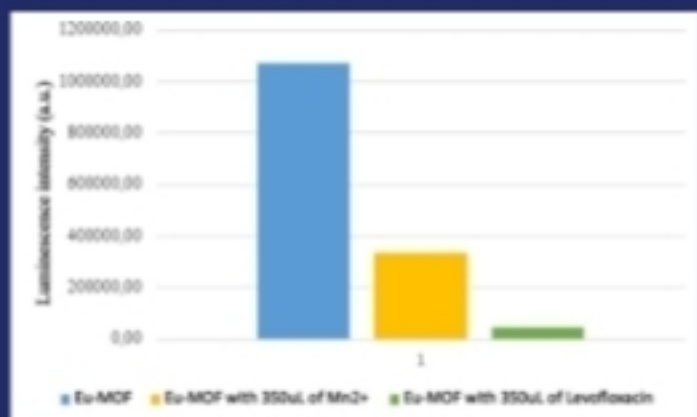
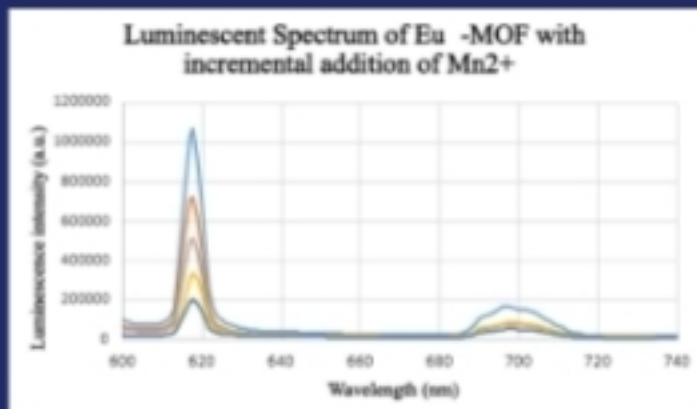
- Synthesis of Eu-MOF and Tb-MOF
- Characterization of Eu-MOF and Tb-MOF
  - Infrared Spectroscopy (IR)
  - Electron Microscopy
  - X-Ray Diffraction
- Results of Optical Detection

The Ln-MOFs combine the lanthanide's luminescence with the MOFs' porosity, making them highly suitable candidates to be used on the detection of water pollutants as optical sensors.

### Eu-MOF

### RESULTS OF OPTICAL DETECTION

### Tb-MOF



**CONCLUSION:** To conclude, the combination of lanthanide ions and metal-organic frameworks (MOFs) is extremely valuable to be used as optical sensors for the detection of water pollutants.