

**Experiment title:**

X-ray Excited Optical Luminescence (XEOL) -detected XAFS investigation of luminescent silver clusters confined in SAPO and TiSi microporous frameworks

Experiment number:

CH-5935

Beamline: BM08	Date of experiment: from: 7/04/2021 to: 14/04/2021	Date of report: <i>Received at ESRF:</i>
Shifts: 18	Local contact(s): Dr. Francesco d'Acapito	

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Report:

We collected simultaneously the XEOL- and transmission-detected XAFS of twelve silver-based luminescent samples at the Ag-K edge. Six samples were measured in pellet form, the other six were measured in capillaries due to their moisture sensitivity. Due to COVID pandemic restrictions we could not attend in person the beamtime and all measurements were carried out successfully by the beamline scientist while we were taking care of the measurements online. However it was very challenging to fully follow the experiment and do the required additional luminescence checks on the samples.

The measured XEOL-XAFS allowed us to determine the structure of the luminescent species in our samples, which is not possible with other techniques. The data have been fully analysed and are currently being included in the preparation of several manuscripts and a PhD thesis.

XANES spectra for Ag-sitinakite of different composition and hydration pointing out the very good quality of the recorded data are presented in Fig. 1:

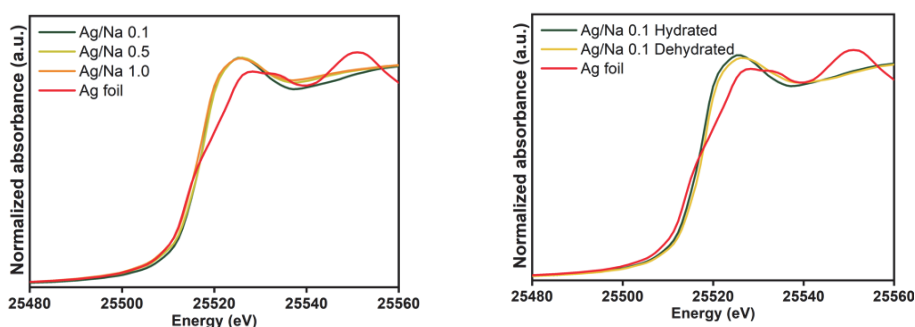


Figure 1: XANES spectra of Ag-sitinakite of different composition and hydration