Seminar Speaker Series

in the framework of Interreg V-A project CAPSID

presents

Dr. Eva Pereiro

ALBA Synchrotron, Spain

Locating specific structures or molecules in cells

by correlative cryo-3D X-ray imaging

25. 03. 2021 at **14:00**

Online virtual talk via Zoom

Join this talk here

Organized by:

Dr. Eva Pereiro

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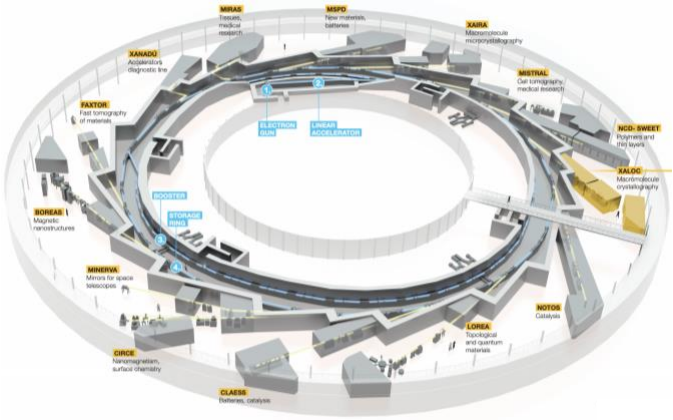
https://www.cells.es/en/beamlines/bl09-mistral/staff



SHORT BIO

After my PhD using X-ray imaging techniques in Material Sciences at the European Synchrotron Radiation Facility (Grenoble, France), I focused on using X-ray imaging techniques applied to biological samples. At ALBA, the Spanish synchrotron, we designed and built a dedicated beamline for cryo soft X-ray tomography of cells and we are now focusing on cryo correlative approaches using X-ray fluorescence or super resolution on the same cell.

RESEARCH HIGHLIGHT

Cryo soft X-ray tomography (SXT) of whole hydrated cells in the water window energy range can provide relevant structural information of complex cellular phenomena with chemical sensitivity at spatial resolutions of 30 nm half pitch [1]. Functional studies can be achieved by correlating this information with cryo visible light fluorescence microscopy in 2D or 3D [2, 3, 4], as well as with 3D cryo hard X-ray fluorescence to localize and quantify specific molecules [5]. In addition, spectroscopic imaging can also be used to understand biomineralization processes [6]. Examples of 3D correlative cryo X-ray imaging research will be presented.

REFERENCES

[1] Schneider G. et al. **Nat. Methods** 7: 985-987 (2010)

[2] Pérez-Berná A.J. et al. **ACS Nano** 10, 6597-6611 (2016)

[3] Kounatidis I. et al. **Cell** 182: 1-16 (2020)

[4] Conesa J.J et al. **mSphere** 5 (5): e00928 (2020)

[5] Conesa J.J. et al. **Angewandte Chemie** 59, 1270-1278 (2020)

[6] Kahil K et al. **PNAS** 117 (49), 30957-30965 (2020).

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