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Sub cellular scale mapping of deuterated compounds by nanoSIMS

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High resolution imaging mass spectrometry by nanoSIMS (nano scale secondary ion mass spectrometry) is a valuable method to observe deuterium accumulation in any number of sample types. NanoSIMS analysis is a high resolution isotope and elemental imaging technique for solid sample surfaces, allows for spatial resolution as low as 50nm and has high sensitivity which makes it an ideal method for observing deuterium accumulation in sub cellular features of any number of sample types. The nanoSIMS method allows for simultaneous analysis of up to seven ion species, meaning there is capacity to pair deuterium analysis with other elemental or isotopic inquiry. In this presentation, fundamentals of nanoSIMS analysis are explained with emphasis on application to deuterium observation. The Microscopy Australia supported nanoSIMS facility at The University of Western Australia has recently begun collaboration with users that have sourced deuterated compounds from ANSTO based National Deuteration Facility and these examples will be discussed in detail.

Presenter Gender

Man

Do you wish to take part in the Student Poster Slam

No

Condition of submission

Yes

Students Only - Are you interested in AINSE student funding

No

Level of Expertise

Experienced Researcher

Pronouns

Which facility did you use for your research

National Deuteration Facility

Primary authors: Dr BOUGOURE, jeremy (University of Western Australia); Dr JIANG, Haibo (University of Western Australia)

Presenter: Dr BOUGOURE, jeremy (University of Western Australia)

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