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Type : Oral

Precision Measurement of the Complex Fine Structure at the Australian Synchrotron

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Current applications of X-ray Absorption Fine Structure (XAFS) to low absorbing samples such as ultra-thin films in semiconductor and nano-devices have been limited. This is expected to not be the case for the phase component of the fine structure as it is generally orders of magnitude larger than the absorption component in the x-ray regime. Here, we present details of precision measurements of both the phase and absorption components of the atomic fine structure across the K-edge of thin copper and iron foils. The experiments applied Fourier Transform Holography with an extended reference in spectroscopy mode and were conducted at the XFM and the SAXS/WAXS beamlines of the Australian Synchrotron. The results provide critical experimental benchmark for further theoretical development and has potential to delve into the phase equivalent of XAFS related techniques.

Level of Expertise

Student

Presenter Gender

Man

Pronouns

Which facility did you use for your research

Australian Synchrotron

Students Only - Are you interested in AINSE student funding

Yes

Do you wish to take part in the Student Poster Slam

No

Condition of submission

Yes

Primary author(s) : KIRK, Tony (La Trobe University)

Co-author(s) : TRAN, Chanh (LIMS, School of Molecular Sciences, La Trobe University); Mr DI PASQUALE, Paul (La Trobe University); Mr DAO, Minh (La Trobe University); CHANTLER, Christopher Thomas (University of Melbourne); Mr CEDDIA, Julian (Monash University); DE JONGE, Martin; KEWISH, Cameron (Australian Synchrotron); PATERSON, David (Australian Synchrotron); KIRBY, Nigel (Australian Synchrotron); MUDIE, Stephen (ANSTO)

Presenter(s) : KIRK, Tony (La Trobe University)

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