

Diamond Light Source: Annual Review 2020-21

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- 3. Uploading your submission to Scholar One**

Step-by-step guide

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Guidelines for submission



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2. Preparing your submission

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Word limit is set at an absolute maximum of 1200 words, excluding figure captions. If you submit a manuscript with more than 1200 words, you will be asked to reduce this after the review period.

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- 800 words (1x large, 2x small figs)
- 1000 words (3x small figs)
- 1200 words (1x large or 2x small figs).

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Manuscript length – Example 1

Title

Propagation of repressive chromatin marks by PRC2 - how EED recognises histone tails

Dr Steven Gambin, National Institute for Medical Research

The vast majority of the electronic devices today are based on silicon technology and their performance and operation depend on the movement and mobility of electronic charge. This mode of operation sets the limits on power consumption, operation speed and results in potential device overheating, particularly at fast switching speeds. At the same time, it is well-known that electrons also possess a spin and the idea of manipulating this property led to a relatively new field of research - spintronics. One of the goals of spintronics is to combine the magnetic memory stored on the spin of the electrons with the high processor in a single chip, leading to smaller and faster computers that consume less power. The group of dilute semiconductors, which are made of a mixture of a magnetic and a non-magnetic material, is one of the most interesting magnetic materials to emerge in the last few years. While the III-V and oxide-based ferromagnetic semiconductors have been well explored the study of magnetism in the technologically important group IV semiconductors has somewhat lagged behind. In earlier studies of Mn-implanted Si [1, 2] it was not clear whether the magnetism was intrinsic or due to new phase and/or cluster formation because of high temperature processing we have performed EXAFS studies and used beamline I18's microfocus capabilities to map Mn distribution in dilute magnetic semiconductor (Mn-doped Si) in order to shed light on the question of possible origins of magnetism in Mn-implanted Si layers. Mapping has indicated the

Lay summary

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called "white line"). These features are particularly obvious in the first derivative of the signal. One can clearly see at least two distinct coordination shells of atoms around Mn in the magnitude of the Fourier-Transform of the K₂-weighted absorption fine structures extracted above the Mn edge. Further analysis revealed that the first shell is definitely composed of Si atoms more than 4 in number. Therefore, we can conclude that Si layer does not contain a detectable amount of Mn clusters. This may suggest interstitial Mn in the Si lattice, but we found that the second shell is composed of Mn atoms rather than Si. Multiple scattering EXAFS analysis (with a path length of up to 15 Å, with up to 3 atoms in the path, within a cluster based on MnSi B20 structure) produced

165 x 87mm
5.75mg (300dpi)

Figure 1. Structure of EED in complex with trimethylated histone H3 peptide.

800 words(excluding intro) with 3 x illustrations

80 x 84mm
2.68mg (300dpi)

Figure 2. Hydrophobic box of EED (coloured blue) with bound H3K27me3 peptide (yellow). 2Fe-Fe electron density for the bar bar residues and peptide is shown.

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References

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250 words

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Figures:
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Manuscript length – Example 2

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Propagation of repressive chromatin marks by PRC2 - how EED recognises histone tails

Dr Steven Gambin, National Institute for Medical Research

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The Debye-Waller factor (mean-square relative displacement of atoms) is rather large for the first peak and this is likely to be due to the presence of more than one shell under the peak, but further detailed analysis is limited by the available data range. The interesting result here is that the second shell consists of only Mn atoms. In fact, we found that it was impossible to obtain a satisfactory fit with any other configuration (e. g. Si atoms in second shell).

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Lay summary:
250 words

Main body:
1000 words

Figures:
Three medium

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Manuscript length – Example 3

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Dr Steven Gambin, National Institute for Medical Research

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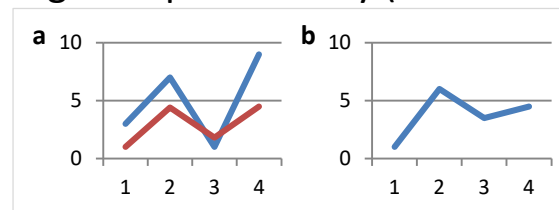
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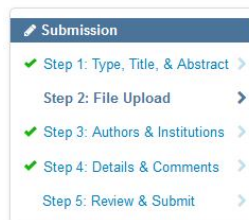
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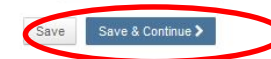
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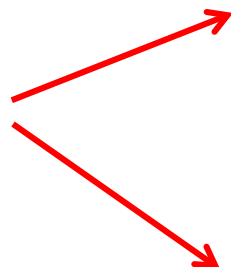
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