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Design and commissioning of the Cryogenic SEY measurement facility at Daresbury

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Electron cloud mitigation will be critical for the Future Circular Collider (FCC) and it has been specified that the wall material needs to have a Secondary Electron Yield (SEY) < 1. The baseline material for electron cloud mitigation will be Laser Ablated Surface Engineering (LASE) of Copper on the beam screen. The FCC will have a beam screen with T between 20 and 60 K therefore the behaviour of the LASE surfaces is critical at these temperatures. In this work we will report the first results from the cryogenic SEY measurement facility at Daresbury Laboratory of LASE samples at these temperatures with and without cryosorbed gasses on the surface.

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