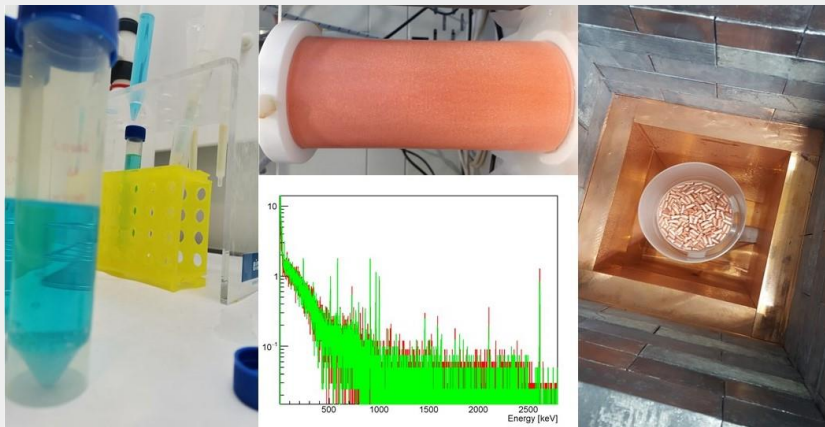


# LSC NEWSLETTER

SECOND TRIMESTER | ISSUE 2 - JULY 2021



## Copper, copper, copper

The structural component closest to the active detection system in LSC experiments is copper. A large LSC team is completing the procurement of ultra-pure copper, screening by gamma spectrometry (HPGe) and mass spectrometry (ICPMS) and radiopurity improvement by electroforming (EFCu). This service has been improved by the process control and monitoring, increase in the dimensions of the electroformed copper piece and the plating rate optimization.

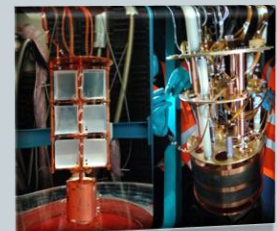


## The opening flight of DArT already ongoing

After characterization and data taking on surface at CIEMAT (Madrid), the detector DArT was moved to LSC in March. It is currently taking data in standalone mode (out of ArDM). At the beginning of May, a lead shielding was mounted around the detector introducing a background reduction that allows us to see Ar-39 spectrum.

## Quantum computing meets ultralow background underground experiments.

The experimental proposal ArQ (Abatement of Radioactivity for Qubits) and members of the CROSS experiment collaboration met at the LSC in June to discuss the influence of cosmic rays in supercomputing qubits.



## New crystals in CROSS

Six new bolometers have been installed in June in the dilution refrigerator. Among them, the new CROSS lithium molybdate crystal contains a superconducting palladium-aluminium grille on five of its faces with a light detector on the sixth, with the technological challenge of separating beta decays on the surface from those happening on the inside.

## Publication on CROSS prototypes' results

Results on beta-particle surface sensitivity achieved with the LSC'S 'CROSS' experiment prototypes at IJCLab have been published by Applied Physics Letters. The article has been chosen as an "Editor's pick"; and advertised by a special communication named "Scilight"

<https://arxiv.org/abs/2103.01175> / <https://aip.scitation.org/doi/10.1063/1.50005010>

