

Using lithium isotopes to track the origin of lithium in Li-ion batteries

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Lithium is an essential commodity for the energy transition. Lithium-ion batteries (LIB) are used to power electric cars, as well as to store grid-scale electricity. LIBs are also used in electric cordless tools, smartphones and laptops. The demand for lithium (Li) is expected to increase significantly in the near future, due to the growing need for clean energy technologies. The consumer expectations will also grow in terms of guarantees on the origin of Li and the efforts made to reduce the environmental and social impact potentially linked to its extraction. Today, the supply chain of the LIB industry is very complex, making it difficult for end-users to ensure that Li comes from environmentally friendly and responsible sources. Using an innovative geochemical approach based on lithium isotope analysis of raw and processed materials, we show that lithium isotope "fingerprinting" is a useful tool for determining the origin of lithium in LIB batteries (Desaulty et al., 2022). This study paves the way for a new method to ensure the certification of Li in LIBs.

Desaulty, A.M., Monfort Climent, D., Lefebvre, G., Cristiano-Tassi, A., Peralta, D., Perret, S., Urban, A., Guerrot, C., 2022. Tracing the origin of lithium in Li-ion batteries using lithium isotopes. *Nat. Commun.* 13, 1–10. <https://doi.org/10.1038/s41467-022-31850-y>