***Sourcing critical metals Te, Bi and W as by-products from Björkdal Gold Mine, Sweden***

Te, W and Bi are on many critical metals lists, and my work aims to source these metals as by products from gold mining using environmentally-benign, low-cost Deep Eutectic Solvents (DESs), with Björkdal as a feasibility study.

Gold deposits are often enriched in other rare metals, and Björkdal produces gold concentrates and waste (tailings) variably rich in Te, Bi and W-bearing minerals. Currently, there are few economical options by which to extract these additional metals. Developing a method for their recovery on site would be ideal for meeting demand without opening new mines.

Tracing the flows of Te, Bi and W through the processing plant, and mineralogically characterising feed, tailings and concentrates reveals some promisingly high enrichments. The next steps are to test the feasibility of inserting DES leaching stages and/or altering the processing procedures.