**Area of interest:**

My experience and research interests over the past 10 years have been focused on microbial-metal interactions, community structure and function of biofilms and bioaccumulation of metals (Zn, Cu, Cr, Fe, V, U and rare earths). I have had the opportunity to work in Tinto River, one of the world`s most extreme environments, where I found biofilm resistant to extreme concentrations of Zn (see CV-publication). Also, I was able to access the processes of natural attenuation following phosphogypsum pollution at the city Huelva, Spain, as well as, to investigate possible biostimulation to immobilize the toxic metals that could be leached during weathering processes. From this research, I published Three papers and a book (see CV-publication). These investigations were the basis of my doctoral thesis.

In addition, I am interested in the development and implementation of bio / remediation systems for acid and alkaline mine water, nitrate and emergent contaminants. During my PhD, I collaborated in the development and installation of passive systems which led to publication of 3 research papers. Currently, in my postdoctoral research I have developed on a patent on passive remediation of AMD based on barium carbonate (PCT/IB2015/056760). I am also obtaining excellent results in laboratory experiments (batch experiments and columns), as well as in pilot scale which will be published in the near future.

At present, I am working on bioremediation (bench to pilot scale) of nitrate, sulphate and metals, as well as, bioleaching and recovery of rare earths (lanthanide group and Yttrium). I have also participated in research within the Deep Carbon Observatory (DCO) international project -extremophiles (sampling in deep underground mines with conference posters and papers). I also have ongoing collaborations with the Universities of Huelva (Jose Miguel Nieto), Free state (Esta van Heerden) and Cadiz (Prof. Alfonso Corzo) about a biofilm that selectively bioaccumulate copper from abandoned mines of the Iberian Pyrite belt and which has not been previously described.