Dear Editor,

Multivariate models are a useful tool when studying the effect of independent variables on one or more dependent variables, since it allows modelling the dynamics of complex systems based on simple analytical models with considerable certainty. Then, due to the decrease in the copper oxide mineral grades, the leaching of copper sulphide minerals (secondary sulphides) has positioned itself as the benchmark of operation for the Chilean mining industry and the development of analytical models that study the copper recovery from chalcocite in function to time, H2SO4 and chloride has not been developed in the literature.

In the present work, we present a study of the effects of sulfuric acid, chlorine concentration and time on the extraction of copper from sulphured minerals (chalcocite), considering an experimental design, the surface optimization methodology and the adjustment of a quadratic model.