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Type: **Poster Presentation**

## A mechanistic non-process dependent study of the prediction and optimization of mineral beneficiation and metal extraction.

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**Abstract.** Process prediction and optimisation have been regularly conducted in physical systems. While most of the tools used require the introduction and analysis of input–output parameters, often ranges of values are required. The observed non-personalisation of the range of input parameters and the obtained outcome values in the metallurgical processes has prompted the content of this paper. For the same range of values introduced into the input layer of an artificial neural network frame, with the very same weight and boundary conditions would lead exactly to the same outcomes interpretation of which is process dependent. The paper will discuss the case of concentration of sulphide minerals through flotation compared to the case of the dissolution of cobalt-bearing minerals in an acid solution before ending with the calcination and roasting of a sulphide. A demonstration of the non-specification of the outcome of the physical systems will be discussed.

### Apply to be considered for a student ; award (Yes / No)?

Yes

### Level for award;(Hons, MSc, PhD, N/A)?

MEng.

### Consent on use of personal information: Abstract Submission

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