

# Slag Practice Optimisation for Valorisation

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## Why slag valorisation is a “hot” topic

In a metallurgical or other high temperature process, several aspects are influenced by the chosen slag practice:

- Metal yield
- Refractory lifetime
- Ease of tapping and deslagging
- Availability of resources

Enabling slag reuse and recycling is an important aspect to consider as well. In some cases, the demands are conflicting with process requirements. Then, hot stage slag engineering is still possible. For instance, additives can be mixed into the slag or specific cooling procedures can be applied.

However, in many cases, process and reuse requirements go hand in hand without additional slag processing. Indeed, less metal losses to the slag lead to less heavy metal leaching. Or, slag volume reduction leads to quicker processing and less handling costs.

That is why, to improve slag value, we like to focus on the “hot” side.

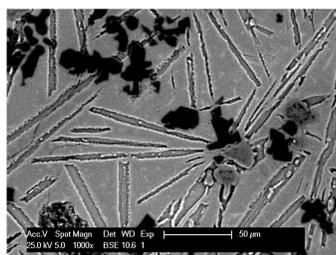


Tapping of a steel slag pot at the slag yard. At this moment, most of the slag's properties have already been determined by choices made during the high-temperature process.

## Measurement equals knowledge

Slag valorisation improvement requires understanding the slag chemistry and structure. As small companies have only limited characterization tools available, InsPyro offers access to:

- Microscopy for microstructure evaluation
- XRD for phase quantification
- ICP or XRF for chemical composition measurements
- EPMA for local phase composition, gradients...

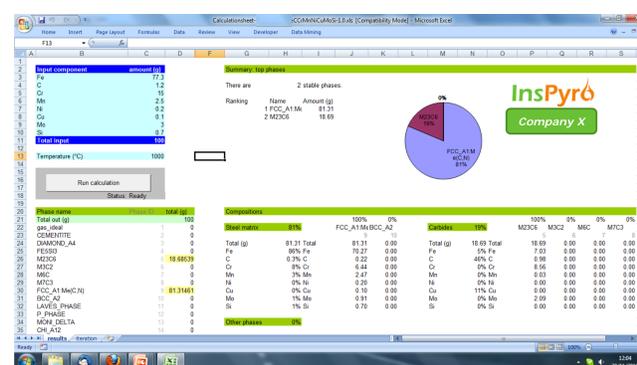


SEM-EPMA and XRF measurements on slag

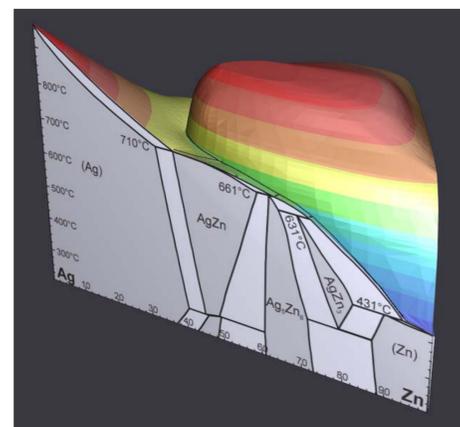
## Importance of visualisation aids

As the slag's properties are mainly determined by its mineralogy, and hence by its composition, it is important to understand these relations well. Phase diagrams and modern thermodynamic software can explain them, but they are often dull, unclear, or confusing. Learning organisations need better tools to capture knowledge and to communicate about it

InsPyro understands this need for educational aids on phase relations. From 2011, we do not only offer consulting and courses in the field, but also:



Customised “one click” phase and reaction calculations



3D versions of phase diagrams printed in full colour

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